EFFECTIVENESS OF ORAL HYGIENE ON DRY MOUTH AMONG NASOGASTRIC TUBE CHILDREN IN PEDIATRICS WARD AT GOVERNMENT RAJAJI HOSPITAL MADURAI.

M.Sc (NURSING) DEGREE EXAMINATION

BRANCH – II CHILD HEALTH NURSING

COLLEGE OF NURSING

MADURAI MEDICAL COLLEGE, MADURAI -20.

A dissertation submitted to

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY,

CHENNAI - 600 032.

In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

OCTOBER 2017

EFFECTIVENESS OF ORAL HYGIENE ON DRY MOUTH AMONG NASOGASTRIC TUBE CHILDREN IN PEDIATRICS WARD AT GOVERNMENT RAJAJI HOSPITAL MADURAI

Approved by Dissertation committee on……..

Research Guide _____

Prof. S.POONGUZHALI, M.Sc (N)., M.A.,M.B.A., Ph.D.

Principal,
College Of Nursing,
Madurai Medical College,
Madurai.

Clinical Specialty Guide _____

Mrs. N. MAHESWARI, M.Sc (N).M.A.,M.B.A.,D.P.H.N.,Ph.D.,
Faculty in Child Health Nursing ,
College of Nursing,
Madurai Medical College,
Madurai.

Medical Expert _____

Dr. K.MATHIARASAN,M.D.,DCH.,
Director,
Institute of Child Health and Research Centre,
Govt. Rajaji Hospital, Madurai -20.

A dissertation submitted to

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY,

CHENNAI- 600 032.

In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

OCTOBER 2017

CERTIFICATE

This is to certify that this dissertation titled**" EFFECTIVENESS OF ORAL HYGIENE ON DRY MOUTH AMONG NASOGASTRIC TUBE CHILDREN IN PEDIATRICS WARD AT GOVERNMENT RAJAJI HOSPITAL MADURAI."** is a bonafide work done by **Mr.O.SELVARAJAN.** M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai - 20, submitted to THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI in partial fulfillment of the university rules and regulations towards the award of the degree of **MASTER OF SCIENCE IN NURSING, Branch II, Child Health Nursing,** under our guidance and supervision during the academic period from 2015-2017.

Prof.S.POONGUZHALI,
M.Sc (N)., M.A., M.B.A., Ph.D.
PRINCIPAL,
COLLEGE OF NURSING,
MADURAI MEDICAL COLLEGE,
MADURAI-20.

Dr. D.MARUTHU PANDIAN.
M.S.,FICS.,FAIS.,
DEAN,
MADURAI MEDICAL COLLEGE,
MADURAI-20.

CERTIFICATE

This is to certify that the dissertation entitled **"EFFECTIVENESS OF ORAL HYGIENE ON DRY MOUTH AMONG NASOGASTRIC TUBE CHILDREN IN PEDIATRICS WARD AT GOVERNMENT RAJAJI HOSPITAL MADURAI."**is a bonafide work done by **Mr. O. SELVARAJAN.,** M.Sc (N) College of Nursing, Madurai Medical College, Madurai - 20, in partial fulfillment of the university rules and regulations for award of **MASTER OF SCIENCE IN NURSING, Branch II, Child Health Nursing,** under my guidance and supervision during the academic year 2015-17.

Name and signature of the guide_____

Mrs. N. MAHESWARI, M.Sc (N).M.A.,M.B.A.,D.P.H.N.Ph.D.,
Faculty in Child Health Nursing,
College of Nursing,
Madurai Medical College,
Madurai

Name and signature of the Head of Department_____

Prof. S.POONGUZHALI, M.Sc(N)., M.A., M.B.A., Ph.D

Principal,
College of Nursing,
Madurai Medical College,
Madurai.

Name and signature of the Dean _____

Dr. D. MARUTHU PANDIAN. M.S., FICS.,FAIS.,

Dean,
Madurai Medical College,
Madurai.

ACKNOWLEDGEMENT

"Acknowledge him in all your ways and he shall direct your paths"

Any dissertation work is a corporate endeavor necessitating the assistance of more than one. My attempt to bring out this assignment is therefore teamwork. I the investigator of this study owe deep sense of gratitude to all those who have contributed to the successful completion of this study**.**

Many helping hands have smoothened every step of this dissertation First of all I praise and thank the **LORD ALMIGHTY** for his abundant grace, Blessing, support, wisdom, and strength throughout this endeavor.

Gratitude calls never expressed in words but this only to deep perceptions, which make words to flow from one's inner heart. The satisfaction and pleasure that accompany the successful completion of any task would be incomplete without mentioning the people who made it possible, whose constant guidance encouragement, rewards and any effort with success. I consider it is a privilege to express my gratitude and respect to all those who guided and inspired me to complete this study.

I wish to acknowledge my sincere and heartfelt gratitude to **all my well wishers** for their continuous support, strength and guidance from the beginning to the end of this research study.

I extend my sincere thanks to **Dr.D. MARUTHU PANDIAN. M.S., FICS., FAIS.,** Madurai Medical College, Madurai for his guidance and supervision.

I extend my sincere thanks to **Dr.M.R.Vairamuthuraju, M.D, (G.M), Rtd Dean,** Madurai Medical College, Madurai for his acceptance and approval for the study.

I owe a profound debt of heartfelt gratitude to our beloved Principal, **Prof. S.Poonguzhali, M.Sc (N), M.A, M.B.A, Ph.D.,** College Of Nursing, Madurai Medical College, Madurai for her words of appreciation, unwavering encouragement, invariable help, insisting support, timely correction and scholarly guidance that she has bestowed on me, which kindled my spirit and enthusiasm to go ahead and accomplish this study successfully.

I wish to extend my heartfelt thanks to **Dr. S. Rajamani, M.Sc(N)., M.B.A., D.P.H.N., Ph.D., Reader in Nursing**, who has created an idea to develop this statement of the problem. It is very essential to mention that her wisdom and helping tendency has made my research a lively and everlasting one.

I express my heartfelt and earnest thanks to **Mrs.N.Maheswari, M.Sc(N).,M.A.,M.B.A.,D.P.H.N.Ph.D.,** Faculty in Child Health Nursing, College of Nursing, Madurai Medical College, Madurai for her hard work, effort, interest and sincerity to mould this study in successful way, which had given inspiration, encouragement and laid strong foundation on every stage of research.

My deep sense of gratitude to **Ms. A.R. Sudharma Devi, M.Sc(N)., Rtd. Lecturer, Department of Child Health Nursing,** College of Nursing, Madurai Medical College, Madurai, for her timely help and guidance.

I offer my earnest gratitude to all the **Faculty Members** of College of Nursing, Madurai Medical College, Madurai for their assistance and moral support.

My heartfelt gratitude to **Dr.K.Mathiarasan, M.D.,D.C.H**., Director, Institute of Child Health and Research Centre,Madurai Rajaji Hospital, Madurai for his generous support, keen attention, valuable amendment, guidance to translate this study into illustration.

I extend my sincere thanks to **Mr.V.Mani. M.Sc., M.Phil.,** Bio-statistician, for suggestions and statistical analysis.

I extend my warm thanks to **Mr. B. Manikandan. B.Sc.,M.L.I.S., Librarian,** College of Nursing, Madurai Medical College, Madurai, for his support in collecting the related literature for this study.

I extend my thanks to **Dr.K. Mathiarasan, M.D.,D.C.H**., Pediatric Medicine, Institute of Child Health and Research Centre, Madurai Rajaji Hospital, Madurai, **Dr.B.Hemanthkumar.M.S.,M.Ch.,**Professor and HOD in department of peadiatric surgery, Madurai Rajaji Hospital, Madurai**, Mrs.P.Mallika.M.Sc(N).,** Principal, J.K. College of Nursing, Coimbatore, **Mrs.K.Amudha. M.Sc.,(N).,** Principal, Sreebharani College Of Nursing, Salem, **Mrs.R.Jothilakshmi, M.Sc (N),.** Associate professor, Sacred Heart Nursing College,Madurai for their suggestions and tool validity.

I extent my thanks to **Mr.S. Karthick.M.A.,B.Ed.,**for doing English editing of the study. I also thank to **Mrs.R.Kanagavalli, M.A., M.Phil.,M.Ed.,** for doing Tamil editing of the study.

I extend my sincere thanks to **Mr. P. Thirunagalinga Pandian.M.Sc(N)., M.A.,D.Pharm.,** Faculty in Nursing, School of Nursing, Madurai Medical College, Madurai for his valuable suggestions, guidance and contributions in this study.

I thank all the Nasogastric tube children participated in the study without them it would have been impossible to complete to this study.

This acknowledgement will not be complete if I fail to offer my special heartfelt thanks, and words are not adequate to express my gratitude to my beloved wife **Mrs.S.Kalaiselvi.** and my daughters **S.JayaJyothy., & S.JayaBharathy** and My Lovable sisters **Mrs. O.Vijayalakshmi, Mrs. O .Anandhi** and My Brother **Mr.O.Shanmuganath.** for their love, care, assistance support and constant encouragement throughout this study.

I thankful to my beloved colleagues **Mr. K. Prem Belwin, Mrs.Kannan Umasoundari, Mrs.S.Rajeswari, Ms. R. Abishak,Ms. T. Sophia** and who are always be with myside for the past two years and helped me a lot in this study and **all my classmates** who provided encouragement, who listened to, and always supported me during the study.

I owe my great sense of gratitude to **LASER POINT,** Vasantha Nagar, for the enthusiastic help and sincere effort in typing the manuscript with much valuable computer skills, in translation of the tool and also for untiring, innovative, diligent effort for carefully printing my dissertation.

I dedicate this dissertation, to My worldly Ever lovable and Dedicated Mother (late) **Mrs.O.SURULIAMMAL.** and Father **M.OCHAPPAN.**

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to obtain desired career objective.

ABSTRACT

Title: Effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai **Objectives:** To assess the level of dry mouth among nasogastric tube children in Pediatric ward at Government Rajaji Hospital, To evaluate the effectiveness of oral hygiene on dry mouth among nasogastric tube children in Pediatric ward at Government Rajaji Hospital and To associate level of dry mouth among nasogastric tube children with their selected socio demographic variables. **Hypotheses:** H_1: There is a significant difference between the pre test and post test level of dry mouth among nasogastric tube children. H_2**:** There is a significant association between the level of dry mouth with their selected sociodemographic variables. **Conceptual Framework :** Modified Orem's Self Care Theory (1991). **Methodology:** Quantitative approach – Pre experimental-One group pre test post test design. Sample size was 40, selected by Consecutive sampling technique. Modified Beck's oral assessment Scale was used to assess pre test level of dry mouth. Oral hygiene was provided three time daily for 3 consecutive days. On the fourth day post test was done by using the same tool **Results:** The result revealed that there was a significant reduction in the level of dry mouth after intervention, which was confirmed by paired 't' test. The 't' value is 23.98, P value at<0.001 level of highly significance . **Conclusion:** This study statistically proved that Oral hygiene was very effective in reducing the dry mouth among nasogastric tube children.

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Introduction

CHAPTER I

" Good oral health is essential for general well-being and a good quality of life "

(Couch Mead and Walsh 2013)

INTRODUCTION

Biologically , a child is a human being between the stages of birth and puberty. The legal definition of child generally refers to a minor, otherwise known as a person younger than the age of majority.

Child may also describe a relationship with a parent (such as sons and daughters of any age) or, metaphorically, an authority figure, or signify group membership in a clan, tribe, or religion; it can also signify being strongly affected by a specific time, place, or circumstance, as in "a child of nature".

Every child goes through many stages of social development. An infant or very young child will play alone happily. If another child wanders onto the scene, he or she may be physically attacked or pushed out of the way. Next, the child can play with another child, gradually learning to share and take turns. Eventually, the group grows larger, to three or four children. By the time a child enters kindergarten, he or she can usually join in and enjoy group experiences.

In the past psychologists have tended to focus on how disorders involving negative mood can be prevented rather than how happiness can be achieved. However, more recently psychologists, notably Professor Martin Seligman, have developed what they call 'positive psychology': the study of happiness and well-being.

We worry about what a child will become tomorrow, yet we forget that he is someone today. It is easier to build strong children than to repair broken men. Take good care of the child's baby teeth. They do eventually fall out but until they do, baby teeth play an important role in helping the child bite and chew food, and speak clearly.

Proper oral care at a age is an investment in his or her health that will pay lifelong dividends. Regular brushing helps remove the sticky film of bacteria, called plaque. If not cleaned thoroughly the bacteria in plaque can break down tooth enamel, which can cause cavities and gum disease.

Oral health and general health are intertwined, affecting and affected by one another. General health can affect oral health. Conversely, oral diseases and conditions can affect general health. Medical conditions often have oral implications and consequences.

Poor oral health can profoundly affect an infant’s or child’s health and well-being. Early tooth loss caused by advanced tooth decay can result in failure to thrive in young children. Oral health problems can lead to impaired speech development, inability to concentrate on important early learning experiences, and absences from school or child development programs and may have difficulty completing schoolwork. Their performance in school may deteriorate .Children with severe oral disease may be reluctant to smile owing to embarrassment about the appearance of their teeth.

Oral disease is one of the most common diseases in contemporary society. In spite of considerable advances in preventive dentistry, the vast majority of the population will have experienced both dental decay and gum disease by their early

twenties. Advances in the prevention and treatment of oral diseases mean that most children born in this century will keep their teeth into old age, and the condition of these teeth will depend on how well they are looked after over a lifetime. The vital role our oral health plays in our daily lives, in terms of eating, speaking, smiling and socialising, is often overlooked but it is impossible to separate oral health from general health; behaviours that cause general disease are also implicated in oral disease. Poor oral health appears to impact on general health.

Oral hygiene is about more than just having a good smile. Children who have good oral hygiene will generally be healthier and happier than children who have dental issues. Though many parents believe that oral care for children is of little importance due to children having baby teeth that they will lose, the truth is that there are many reasons why dental care should be a top priority for children. Though a young child's primary teeth will be replaced by permanent adult teeth, parents still need to begin teaching children about proper dental hygiene at a young age. A child who learns to care for his or her teeth early in life will be more likely to practice good hygiene habits later in life which will result in fewer dental problems. Dental caries, or cavities, are a common health problem for many children. These caries can make it painful for a child to eat and can even make it difficult for the child to concentrate in school and enjoy daily activities. However, by thoroughly brushing, flossing and seeing a dentist at regular intervals, a child will be able to eliminate or reduce dental caries and prevent many of the sources of dental pain. In addition to preventing tooth decay, proper dental care will also help to protect a child from becoming ill. Dental caries and other oral health problems can expose a child's body to a range of germs from the environment. Though the body has defenses for swallowed or inhaled germs, germs that enter the mouth can go directly into the blood stream via sores in the

mouth. By practicing good oral hygiene, a child will have a healthier mouth that can help prevent germs from entering into the body.

The oral cavity is known to be a reservoir for pathogens to grow and thrive. Poor oral hygiene can lead to complications such as gingivitis, halitosis, dry mouth**,** plaque formation and dental caries. Recent studies have also related that associated chest infection and pneumonia with poor oral hygiene (Schleder et al, 2002; Yoneyama et.al, 2002). The literature consistently supports that various diseases/ conditions like diabetes, renal failure, malnutrition and dehydration and being on oxygen therapy, cancer therapy, immunosuppressive drugs, and antibiotic or phenytoin treatment increases an individual's risk of oral complications. Therefore, such patients will require more attention to their oral hygiene.

Poor oral hygiene can lead to other health problems like Oral and facial pain, heart and other major organ problems and digestion problems. According to the Office of the Surgeon General, this Oral and facial pain may be largely due to infection of the gums that support the teeth and can lead to tooth loss. Gingivitis, an early stage of gum disease, and advanced gum disease affect more than 75 percent of the U.S. population. Mouth infections can affect major organs. For example, the heart and heart valves can become inflamed by bacterial resulting in endocarditis. Digestion begins with physical and chemical processes in the mouth, and problems here can lead to intestinal failure, irritable bowel syndrome and other digestive disorders.(Susan Rowen James, 2016)

The mouth is the major portal of the body and it can be a source of disease if its integrity is compromised. Care of the mouth is one of the most basic nursing activities if children not attendant the oral care and difficulty to maintain the oral care

and critically ill children. It is an important aspect of care that needs to be carried out consistently. Nurses play a vital role in providing effective Oral Hygiene and promoting oral hygiene. Oral hygiene has significant impact on patients' general well-being and their quality of life. However, the circumstances surrounding hospitalisation and ill-health can lead to neglect of oral hygiene.

A nasogastric (NG) tube is a flexible plastic tube inserted through the nostrils, down the nasopharynx, and into the stomach or the upper portion of the small intestine. Placement of NG tubes is always confirmed with an X-ray prior to use (Perry, Potter, & Ostendorf, 2014).

NG tubes are used to Deliver nutrients to the patient via a feeding pump,Remove gastric contents.

An NG tube used for feeding should be labelled. The tube is used to feed patients who may have swallowing difficulties or require additional nutritional supplements. These tubes are narrower and smaller bored than a Salem sump or Levine tube.

An NG tube can also remove gastric content, either draining the stomach by gravity or by being connected to a suction pump. In these situations, the NG tube is used to prevent nausea, vomiting, or gastric distension, or to wash the stomach of toxins.

The NG tube is fastened to the patient using a nose clip, and is taped and pinned to the patient's gown to prevent accidental removal of the tube and to prevent the tube from slipping from the stomach area into the lungs.

Maintain and promote comfort. The tube constantly irritates the nasal mucosa, causing a great deal of discomfort. Ensure that the tube is securely anchored to the patient's nose to prevent excess tube movement, and is pinned to the gown to avoid excessive pullingordragging. Because one nostril is blocked, patients tend to mouth breathe. This causes dehydration of the nasal and oral mucosa, and patients will complain of thirst, but they are usually NPO *(*nil per oral or nothing by mouth). Mouth care will help to relieve the dryness. This can include rinsing the mouth with cold water or mouthwash as long as the patient does not swallow. Some patients may be allowed to suck on ice chips.

Dry mouth, known medically as xerostomia, occurs when don't have enough saliva, or spit, in the mouth. Feeling stressed can trigger dry mouth temporarily. But a persistently dry mouth may signal an underlying disease or condition, so it's important to see doctor, because dry mouth can lead to tooth decay. Dry mouth may make it difficult to speak, chew, and swallow, and may alter the taste of food. It can also cause a sore throat, hoarseness, and bad breath. Dry mouth can affect people of any age, but children are especially vulnerable. "It's not a normal consequence of aging," - John V.Kelsey. "Children there take multiple medications for their condition that can cause dry mouth." According to the Surgeon General's Report on Oral Health in America, dry mouth is a side effect of more than 400 prescription and over the-counter drugs, such as antidepressants, antihistamines, muscle relaxants, and high blood pressure medicine

Dry mouth is a common problem with a range of causes. The symptom may be due to a reduction in the quantity of saliva produced, or a change in the composition of saliva, but a feeling of dry mouth may also be present in people with normal saliva production. The most common dry mouth symptoms were reported

thirst, saliva that seems thick, stringy, dry, sticky feeling in the mouth, Halitosis (bad breath), dry hoarseness of the throat, dry, irritable and scratchy tongue, burning or tingling sensation of tongue, difficulty speaking, inability to chew, swallow or taste food, dry nasal passages, painful sores of the mouth and tongue, chapped lips, increased plaque, tooth decay and gum disease. Many commonly prescribed medications are associated with a feeling of dry mouth, despite normal saliva production. As well as difficulty in speaking, chewing and swallowing, prolonged dry mouth may result in increased risk of tooth decay and reduced quality of life. In many sufferers dry mouth cannot be cured, but effective ways for people to manage dry mouth symptoms are available. Oxygenated glycerol triester (OGT) saliva substitute spray is more effective than a water based electrolyte spray. A gel-releasing device worn in the mouth, or a mouth care system might be effective but more research is needed. Chewing gum increases saliva production but there is no evidence that gum is better or worse than saliva substitutes. Acidic products and those containing sugar should be avoided

Care of the mouth is an important nursing procedure and should be, performed as part of the routine general hygiene of a patient. Nurses play an important role in providing effective Oral Hygiene and promoting oral hygiene. Oral assessment is an integral part of Oral Hygiene and should take place on admission. Evidence has suggested that early assessment can reduce both the incidence and severity of oral complications. Once an oral assessment has been carried out, it is important to give appropriate Oral Hygiene interventions based on individual patient’s needs. Ongoing oral assessment should be performed to prevent oral complications and to ensure optimal oral health. Children at risk of poor oral hygiene include, Nil by mouth / Post-operative Patient Immuno-compromised, Receiving Antibiotics Oral / Facial

Surgery, Congenital Heart Disease ,Gastro-intestinal Patients e.g. Crohn's disease .Altered nutrition / Failure to Thrive.

Oral care is a basic nursing care activity that provides relief and comfort to patients who are seriously ill and cannot perform this simple activity themselves. In a critical care unit, providing oral care to patients who are uncooperative, have a high risk for aspiration, or are intubated can be a challenge and, at times, an impossible task. However, if the benefit of oral care outweighs the risk, clear, precise oral care procedures and adequate evidence to support these processes are needed. If providing systematic oral care can decrease the incidence of pneumonia and other outcome measures, the care should be considered an important and critical component of critical care nursing.

Fluoride is an inorganic , monatomic anion of fluorine with the chemical formula F^-. Fluoride is the simplest anion of fluorine. Its salts and minerals are important chemical reagents and industrial chemicals, mainly used in the production of hydrogen fluoride for fluorocarbons. In terms of charge and size, the fluoride ion resembles the hydroxide ion. Fluoride ions occur on earth in several minerals, particularly fluorite, but are only present in trace quantities in water. Fluoride contributes a distinctive bitter taste. It contributes no color to fluoride salts.

Fluoride-containing compounds, such as sodium fluoride or sodium monofluorophosphate are used in topical and systemic fluoride therapy for preventing tooth decay. They are used for water fluoridation and in many products associated with oral hygiene. Originally, sodium fluoride was used to fluoridate water; hexafluorosilicic acid (H_2SiF_6) and its salt sodium hexafluorosilicate (Na_2SiF_6) are more commonly used additives, especially in the United States. The fluoridation

of water is known to prevent tooth decay and is considered by the U.S. Centers for Disease Control and Prevention as "one of 10 great public health achievements of the 20th century". In some countries where large, centralized water systems are uncommon, fluoride is delivered to the populace by fluoridating table salt.

Fluoride works during the demineralization and remineralization processes that naturally occur in mouth. After eat, saliva contains acids that cause demineralization a dissolving of the calcium and phosphorous under the tooth's surface At other times when saliva is less acidic it does just the opposite, replenishing the calcium and phosphorous that keep teeth hard. This process is caused remineralization. When fluoride is present during remineralization, the minerals deposited are harder than they would otherwise be, helping to strengthen teeth and prevent dissolution during the next demineralization phase. Normal saline can prevent “dry sockets” and relieve the symptoms associated.

Beck oral assessment

Oral care is a basic nursing care activity that provides relief and comfort to patients who are seriously ill and cannot perform this simple activity themselves. In a critical care unit, providing oral care to patients who are uncooperative, have a high risk for aspiration, or are intubated can be a challenge and, at times, an impossible task. However, if the benefit of oral care outweighs the risk, clear, precise oral care procedures and adequate evidence to support these processes are needed. If providing systematic oral care can decrease the incidence of pneumonia and other outcome measures, the care should be considered an important and critical component of critical care nursing.

Recently, having critical care nurses provide oral care has received increased emphasis. National organizations have listed oral care in a number of prevention interventions. Providing evidence-based oral care requires data to support the intervention. Reliable and valid measures for oral assessment are essential to measure progress and guide intervention. Beck Oral Assessment Scale (BOAS) and the mucosal-plaque score (MPS) to assess the oral cavity. The BOAS provides a realistic and clinically useful assessment of oral integrity in critically ill patients. The 5 subscales, saliva, teeth, tongue, lips, and oral mucosa, encompass the uniqueness of the oral cavity. As reflected in the BOAS scores, the overall results show that systematic oral care can improve oral health in critically ill patients. With the MPS, a much more widely used measure, only the mucosa and the plaque on the teeth are assessed. However, even though BOAS scores are a broader representation of the oral cavity, both the BOAS and the MPS positively correlated across all times. Use of these 2 oral assessment scores can help standardize oral care by providing a mechanism to measure the effects of this important nursing intervention.

Many hospitalized patients in the U.S. receive tube feeding. According to the National Center for Health Statistics latest available statistics, patients received tube feeding in approximately 245,000 hospital stays. About 15% of those were for children and newborns.

A decade ago (2003) there were about 344,000 U.S. residents using feeding tubes in their homes, according to the American Society for Parenteral and Enteral Nutrition.

1.1 Need for study

Oral Hygiene is an essential aspect of the daily hygiene routine. All patients, whether ambulant or unconscious, need oral care. It is a vital component of holistic nursing and its provision influences the overall wellbeing of patients.. The significance of oral health in physical and psychological terms cannot be underestimated. Complications resulting from poor or inefficient Oral Hygiene are well documented and include like Pain and discomfort, which may result in nutritional decline and dehydration, Increased risk of bacteraemia and bacterial endocarditis, Respiratory tract infections, Increased risk of septicaemia, Dry mouth which as a result of reduced saliva production can affect a patient's speech, Halitosis, caused by plaque and dry mouth, which may affect the patient's psychological wellbeing.

Despite overwhelming evidence that poor Oral Hygiene results in unnecessary discomfort, illness and even extended hospital stays for patients, oral hygiene is not a priority in the acute setting, the delivery of Oral Hygiene is fragmented in institutional settings. Longhurst (1998) conducted a clinical audit to determine patients' opinions of Oral Hygiene during hospitalisation. More than 72% of patients rated the Oral Hygiene in hospital as worse than that they provided for themselves at home. However, it is nurses who determine whether patients need help with Oral Hygiene and what equipment and products should be used (Evans 2001).

Every one who experiences xeros- tomia as Salivary gland hypo function (SGH), and vice versa. The evidence suggests that the two are not necessarily concurrent. The relationship between xerostomia and SGH is complex. Logically, xerostomia can occur due to a reduction in salivary flow in SGH, but both the

subjective (xerostomia)and objective(SGH)components are known to occur independently of each other . The few studies conducted on both xerostomia and SGH with in the same population show that the two are largely separate conditions. In a systemtic review, the prevalence of xerostomia preva- lence ranged from 8% to 42%,while the prevalence of SGH prevalence ranged from 12% to 47%. Similarly, in longitudinal study of a population -based sample of 700 older South Australians, the prevalence of xerostomia was 21% and the prevalence of SGH was 22%, but only 6% of participants (or one in six of those with either conditions)had both conditions.

Saliva plays a major role in cleansing the mouth by keeping mucous membranes moist, regulating the pH of the mouth, and digesting food. A biofilm or pellicle is formed from saliva, and this acts as a protective layer for teeth (O'Reilly, 2003). Saliva also contains natural antimicrobial proteins that protect the oral cavity from harmful pathogens (Brennan et al., 2004). In addition to saliva, oral health is maintained by regularly eating and drinking, as well as daily mechanical and pharmacological maintenance of the mouth (O'Reilly, 2003), for example, brushing teeth with fluoride toothpaste and flossing.

Dental plaque results from the colonization and growth of a variety of microorganisms on the surfaces of teeth, soft tissues, and dental prostheses. Seventy (70%) to 80% of the solid material in plaque is made up of bacteria and 1 mm^3 contains more than 108 bacteria with more than 300 varying aerobic and anaerobic species of bacteria (Fourrier et al., 1998). Poor oral hygiene and an accumulation of dental plaque lead to dental caries. This can be painful, treated, will progress to serious tooth damage. Poor oral hygiene will also result in gingivitis (gum disease), which occurs within less than 10 days if dental plaque is not removed. It is characterized by inflamed and bleeding gums that detach from the teeth and result in pocketing between the gums

and the teeth (Franklin et al., 2000). Gingivitis is the first stage of periodontal disease, which if left untreated, can progress to periodontitis (Durso, 2005; Marieb, 1998).

Since the 1970s, the U.S. has seen a decline in dental caries due to community water fluoridation; however, 100 million persons in the U.S. still lack water fluoridation, and only 58% receive optimal levels through community water systems (DHHS, 2001). Fluoridated water continues to be the most cost-efficient and cost-effective method of community caries prevention (Hallett & O'Rourke, 2002; Touger-Decker, 2001; Twetman et al.,2000).

The American Dental Association (ADA) (2008) state that the maintenance of oral health is dependent upon certain components such as hydration of tissues, the cleansing, microbial properties of saliva and debridement of the teeth and tongue. Oral care regimens to support and enhance these interrelated components have been well developed in the outpatient setting, but less well developed for the critically ill. Hydration of oral tissues depends on oral intake as well as the lubrication properties of saliva. Among healthy individuals, an intact thirst mechanism will prompt individuals to drink fluids, thereby receiving moisture to oral tissues and maintaining a positive fluid balance. During times of fever, stress, hypovolemia, or with ingestion of certain medications, the subjective complaints of dry mouth among the general population can be ameliorated by sucking sugar free candies, or sipping water. Chewing gum is also advocated as a way to produce saliva and thereby increase hydration of tissues and stimulate the flow of saliva.

Fluoride works to control early dental caries in several ways. Fluoride concentrated in plaque and saliva inhibits the demineralization of sound enamel and enhances the remineralization (i.e., recovery) of demineralized enamel. As cariogenic

bacteria metabolize carbohydrates and produce acid, fluoride is released from dental plaque in response to lowered pH at the tooth-plaque interface. The released fluoride and the fluoride present in saliva are then taken up, along with calcium and phosphate, by de-mineralized enamel to establish an improved enamel crystal structure. This improved structure is more acid resistant and contains more fluoride and less carbonate. Fluoride is more readily taken up by demineralized enamel than by sound enamel. Cycles of demineralization and remineralization continue throughout the lifetime of the tooth.

Toothpaste with fluoride has been responsible for a significant drop in cavities since 1999. Look for one with the ADA Seal of Acceptance to make sure it contains fluoride.Brush twice a day (morning and night) or as directed by your dentist and physician. For children younger than 3 years, start brushing their teeth as soon as they start to appear in the mouth by using fluoride toothpaste in an amount no more than a smear or the size of a grain of rice. For children 3 to 6 years old, use no more than a pea-sized amount of fluoride toothpaste. Always supervise your child's brushing to make sure they use the right amount and try to get child to spit out most of the toothpaste.

Normal **saline** (0.9%) is a not irritant and is believed to help in formation of granulation tissue and to promote healing. It's safe, economical and readily available mouthwash. Salt water mouthwash rinses are considered an excellent treatment when we have wounds in the mouth. The reason is that salt water is not only a natural disinfectant but it also removes any swelling from the tissue.

Maintaining good oral health includes keeping teeth free from cavities and preventing gum disease. Poor oral health can affect the appearance and self-

esteem,and has been linked to sleeping problems, as well as behavioral and developmental problems in children. Poor oral health can also affect the ability to chew and digest food properly. Good nutrition is important to helping build strong teeth and gums that can resist disease and promote healing.

Nurses have an important role in providing effective oral care and a healthy promotion role in teaching patients about the importance of oral hygiene and oral care. Regular oral care includes things such as mouth washes, which help to maintain moister, remove debris, prevent plaque and reduce the risk of infection .Oral care for patients who are unconscious and those who require assistance with activities of daily living are provided by nurses. Comprehensive oral care is evidence -based. Nurses also have a great role to play in using evidenced based best practices to reduce oral related complications in the patients. There are various methods in various ICU's for oral hygiene as experienced by the critical care nurses.

Nurses are in a unique position to contribute to the improvement of this national health problem by promoting oral health care among hospitalized children and their families. A hospital program for oral health care is proposed, including assessment of teeth and gingiva, ensuring oral care for all, as well as oral health education as part of patient education.

Institution of Child Health & Research Centre (Pediatric) Department is Present at Govt. Rajaji Hospital, Madurai. It is a 200 bedded Department, the bed occupation rate is 100 %. Near 10 % - 20 % of the children are with Nasogastric tube. The recent incidence shows 100 – 250 had nasogastric tube in the year of 2016. Incidence rate of dry mouth is 70 % to 80 % of children suffer with dry mouth.

The researcher, during the clinical posting observed that the children with nasogastric tube children are highly dependent and are not able to meet their oral hygiene, at the same time they are prone for infections due to invasive procedures like Intravenous infusion, Endotracheal intubation, Ryles tube, Urinary catheters etc. Mouth care is routinely provided to the nasogastric tube children. The researcher was interested to evaluate the effectiveness of oral hygiene in improving the dry mouth among nasogastric tube children.

1.2 Statement of problem

"A Study to evaluate the effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai .

1.3 Objectives of the study

1. To assess the level of dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital, Madurai.
2. To evaluate the effectiveness of Oral Hygiene on Dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital, Madurai.
3. To associate level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai, with their selected socio demographic variables and clinical variables.

1.4 Hypotheses:

H_1: There is a significant difference between the pre test and post test level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai.

H_2**:** There is a significant association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai, with their selected socio demographic variables and clinical variables.

1.5 Operational Definitions

Effectiveness: In this study effectiveness refers to the extent to which the intended outcome of the Oral Hygiene on dry mouth among nasogastric tube children, it is measured through Beck oral assessment scale.

Dry mouth: In this study it re refers to the status of lips, Oral mucosa, Tongue, teeth, saliva and halitosis and it is measured through the modified Beck Oral assessment scale.

Oral hygiene : In this study it refers to providing Oral care for children by brushing the teeth with pea size fluoride paste which is less than 1000ppm , rinsing the mouth with normal saline and application of oral glycerine in lips, for 3 times a day (6 am, 12 pm, 6 pm) for 3 consecutive days .

Nasogartric tube children: In this study it refers to children (3 – 12 years) with Ryle's tube kept in position for therapeutic purpose or diagnostic purpose.

Pediatric Ward: In this study it refers to Medical and surgical wards in Institution of Child Health and Research centre, at Govt.Rajaji Hospital, Madurai. Where children are treated for various disease and disorders.

1.6 Assumptions

- Nasogastric tube children may have dry mouth.
- Dry mouth leads to dry edematous in lips, inflamed multiple ulcers in oral mucosa, dry and blister in tongue, teeth debris, thick saliva and halitosis,

1.7 Delimitation

- The duration of the study is limited 4 to 6 weeks.
- The sample size is limited to 40 subjects at Pediatric ward in Govt.Rajaji Hospital, Madurai.

1.8 Projected out come

- Maintenance of oral hygiene in children with nasogastric tube will reduce the dryness of mouth among nasogastric tube children in pediatric wards, at Govt.Rajaji Hospital, Madurai.
- The findings of the study will help the healthcare professionals to practice oral hygiene in all health care settings.

Review of Literature

CHAPTER-II

REVIEW OF LITERATURE

A Literature review is a body of text that aims to review the critical points of knowledge on a particular topic of research. (American nurses association) Review of literature is one of the most important steps in the research process. It is an account of what is already known about a particular phenomenon. The main purpose of literature review is to convey to the readers about the work already done and knowledge and ideas that have been already established on a particular topic of research.

This chapter explains in detail about the review of literature and conceptual framework used for the study. A literature review is a body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Literature reviews are secondary sources, and as such, do not report any new or original experimental work. Also, a literature review can be interpreted as a review of an abstract accomplishment.

Literature review serves a number of important functions in research process. It helps the researcher to generate ideas or to focus on a research approach, methodology, meaning tools and even type of statistical analysis that might be productive in pursuing the research problem.

In order to accomplish the goal of present study an attempt has been made to review and discuss the literature which shall cover the following areas. This chapter deals with two parts:

SECTION A : Review of literature

SECTION B : Conceptual framework

SECTION A : Review of literature

The literature was searched from extensive review from various sources and was depicted under the following headings.

2.1 Literature related to dryness of mouth

2.2 Literature related to dry mouth among nasogastric tube children.

2.3 Literature related to effectiveness of oral hygiene on dry mouth.

2.1 Literature related to dryness of mouth

JAMES GUGGENHEIMER, D.D.S.; PAUL A. MOORE (2016) done a Index Medicus– review of clinical and scientific reports of dry mouth in the dental and medical literature during the past 20 years in United states. It is estimated that 15 percent of patients with rheumatoid arthritis, 25 percent of those with systemic sclerosis and 30 percent of those with systemic lupus erythematosus may develop dry mouth.

Jacqueline M. Plemons, **(2015)** conducted a descriptive study on prevalence of dry mouth among hospitalized children at City Hope National medical centre , California. 200 children were enrolled in the study , it was estimated that 80% of the hospitalized children had dry mouth due to treatment, medications, poor oral care and others medical conditions.

Yaron, M and Ambresin, A F, [2015] analyzed the cross sectional study on prevalence of dry mouth among children receiving epilepsy drugs in Switzerland, 340 children participated in the study. The study was assesed using Beck oral assessment scale, study finding reveals that 86.6%, suffered from dry mouth.

Gumanga S.K and Kwame-Arye [2014] conducted a cross sectional study on prevalence and severity of dry mouth a among 453 diarrhoea preschooler in Ghana. The findings of the study showed that 18.1% ,37.5% and 18.8% children had mild, moderate and severe dry mouth.

Alsakran Altamimi Mohammed (2011) conducted a descriptive study on prevalence of dry mouth among hospitalized children at Riyadh, Saudi Arabia, 700 children taken into the study. Findings revealed that children with epilepsy (35 %), , diarrhea (20 %) , urinary incontinence (11 %), asthma (9 %) had dry mouth associated with halitosis.

K.-I. SUH,CHUNG,(2007) conducted descriptive study to investigate the relationship between whole salivary flow rate and dry mouth-related subjective symptoms and behaviours in children with dry mouth. 73 children with dry mouth were assessed. The effect of oral dryness on daily life was significantly associated with the flow rate of stimulated whole saliva ($r_s = -0{\cdot}30$, $P < 0{\cdot}01$) Dry mouth-related symptoms and behaviours were significantly associated with the whole salivary flow rate.

Yasuaki Kakinoki, Masao Ishikawa (2004) conducted a descriptive study to observe the condition of dry mouth among bedridden children at Japan. 150 study participant were involved in the study. 78.42 % of the bed ridden children suffer from dry mouth due to multi factorial causes including poor oral care and nil per oral status.

2.2 Literature related to dry mouth among nasogastric tube children.

Chang SC, Chao MS, Chen MH.(2015) conducted cross sectional research study on children with nasogastric tube feeding and the number of nasogastric tube-related complications at University of Michigal, Hawai. 127 hospital admitted

children were selected for the study . Finding showed that 81.3 % children had dry mouth in which 12.7 % had halitosis, 9.4 % had cracked lips, 7.45 % had coated tongue.

Nargis Ahamed1 and Debarchana Mondal (2014) conducted a descriptive study on Nasogastric tube related complication among post operative children at selected hospital Kolkata. 50 post post operative children with Nasogastric tube for selected. The study revealed that 48 % had throat pain, 24.6 % had halitosis, 13.5 % had vomiting and 11 % had dry mouth.

Norma A. Metheny, Kathleen L. Clouse(2013) conducted a comparative study to assess the level of dry mouth on Acute Gastro Enteritis children and Down syndrome children with Naogastric tube at selected hospital , Japan. 80 samples were selected .The study reveals that acute diarrhoea children had more than dry mouth compare to down syndrome children with NT tube(p=0.005).

Lara Jansiski Motta, et all (2011) conducted a descriptive study to determine the correlation between halitosis and mouth breathing in children with nasogastric tube. Fifty-five children between 3 and 14 years of age were divided into two groups (nasal and mouth breathing) for the assessment of halitosis. Study showed that total of 23.6% of the participants had no mouth odor, 12.7% had mild odor, 12.7% had moderate odor and 50.9% had strong odor. There was a statistically significant association between halitosis and mouth breathing for nasogastric tube children

Bellissimo-Rodrigues F, Viana JM, et al.,(2009) conducted a descriptive to assess Nasogastric tube related complication among children with cranial surgery at University of Adelaide, South Australia, 40 children were taken into the study. Findings revealed that 42.7 % children had Oral mucus ulcer, 7.9 % had stomatitis, 3.76 had halitosis, 1.20 % had Gingival ulcer .

Smith BJ (2001) conducted a retrospective study in Australia to relate Nasogastric tube complication and intragastric air collection in a neonatal intensive care. 78 neonates were taken in to the study . Finding shows that Nasogastric tubes is the causes of vomiting in 7.1% of cases, dry mouth in 37.7% of cases, and abdomen pain in 5.5% of cases mouth breathing in 35.3% of cases and Nasogastric tubes complication is dry mouth in nearly half of cases.

2.3 Literature related to effectiveness of oral hygiene on dry mouth.

Yaoly, Chang C.K, Maa S.H., (2007) conducted an experimental study to assess the effectiveness of purified water on dry mouth among mechanical ventilator children in Taiwan, 57 samples were included. The study revealed that cleansing the mouth with purified water is effective in reducing dry mouth p = 0.05 among ventilator children

Soh K L, Soh K G, Japar S, (2011) conducted a systematic literature review on oral hygiene practices for PICU children in mechanical ventilation. Articles published form 1985 to 2005 in English and indexed in CINAHL, MEDLINE, AND EMBASE were searched. The result concluded that despite the importance of providing oral hygiene to PICU patients receiving mechanical ventilation, high level evidence from rigorous randomized controlled trials or high quality systematic review that could finger clinical practice is scarce.

Culter CJ , Davis N, (2006) conducted An randomized controlled study to determine the effectiveness of twice oral care on oral hygiene among children with nasogastric tube at selected hospitals, USA. 80 children were enrolled. Twice oral care was provided to the children for 7 consecutive days (p = 0.005%). The study showed that this oral intervention was effective in maintaining oral hygiene.

Yvonne Rohr, (2010): done a review on importance of oral care for all inpatient children with nasogastric tube. Literatures ferom 1995 to 2010 were reviwed and it emphasis on simple oral care methods for prevention of oral related complication among inpatient children with nasogastric tube.

Lisa Johnstone, Deb Spence, Jane Koziol-McLain(2003): Conducted an experimental study on effectiveness of chlorhexidine bacterial colonization among children with nasogastric tube in PICU of selected hospigtals, UK. 50 children were enrolled in the study. The findings showed that chlorhexidine is effective in reducing bacterial colonization of the oropharynx among children with nasogastric tube.

Gaynor Evans RGN, BN (2001) conducted a randomized study to observe effect of oral care on oral hygiene among nasogastric children at selected hospitals, Delhi. 60 children were participated, the study showed that oral care was effective in maintain oral hygiene among children with nasogastric tube.

WT, Viana JM, (2009) conducted a comparative study between chlorhexidine and placebo to evaluate the effectiveness of oral rinse with chlorhexidine in preventing oral ulcer among nasogastric tube children. Study focused on children admitted in PICU with a prospective length of stay greater than 48 hours. The study revealed that chlorhexidine was effective in prevention of oral ulcers.

Kulkarni V V, Damle G, (**2007)** conducted a study to compare the efficacy of Sodium fluoride, Chlorhexidine and Normal saline mouth rinses in reducing the dry mouth in selected hospitals, Mumbai. 60 subjects aged 12-14years Children with Nasogastric tube selected The results confirmed that Normal saline mouth rinse is more efficient in reducing dry mouth as compared to other mouth rinse.

SECTION- B

Conceptual Framework

The conceptual framework for research study presents the measure on which the purpose of the proposed study is based. The framework provides the perspective from which the investigator views the problem.

Conceptual framework refers to interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme **(Polit and Hunger- 1997).**

A conceptual framework on a model is made up of concepts, which are the mental images of the phenomenon. It offers framework of preposition for conducting research. These concepts are linked together to express the relationship between them. A model is used to denote symbolic representation of the concepts.

The conceptual frame work of this study was derived from Self Care Deficit Theory (Dorothea.E.Orem, 1980, Orem (1991) has identified three classifications of nursing system to meet self care requisites of each system describes nursing responsibilities, role of the nurse and patient, rationales for the nurse – patient relationship and types needed to meet the patients relationship, and types of actions needs to meet patients self care agency and therapeutic self care demand. These systems are;

- The wholly compensatory system
- The partial compensatory system.
- The supportive educative system

Arises when the self care agency cannot meet self care requisites (Client is unable to perform self care activities by himself) . Necessitates nursing to meet the self care requisites through five methods of help acting or doing for guiding, teaching,

supporting and providing an environment to promote the client ability to meet current or future demands.

Orem (1991) enumerated five areas of activity for nursing practice. They are as follows

Self care-self care is the learned, goal oriented activity of individual. Adult care for themselves, whereas children , the aged, the ill and the disabled require assistance with self care activities, when self care action is limited because of health deviation.

Self care agency- Self care agency is a learned ability and is a deliberate action. Human need continuous self care maintenance and regulation and it is provided by caring for self, which enables purposeful action. Self activities maintain life, health and well being. Nurse must focus on limitations in self care abilities and must accurately diagnose self-care agency.

Self care demands – Demands or requesties are the activities of daily living. Self care requisites can be defined as actions directed toward the provision of self care. Three kinds of requisites are mentioned, they are universal, development and health deviation.

Deficit- Nursing agency is required, when an individual is incapable of or limited in the provision of continuous effective self care.

Nursing agency- "Nursing agency is a continuing series of actions produced ,when nurses link one way or a number of ways of helping to their own actions or actions of persons under care that are directed to meet these persons therapeutic self care demands or to regulate their self-care agency"

In this study,

- Self care-Self care is the Mouth care, which is a learnt behaviour but not able to be performed by the children with nasogastric tube .
- Self care agency- The childen with nasogastric tube children's self care agency is altered and they are not able to continue their self care activities, which maintain their life, health and well being. Researcher found that children with nasogastric tube mouth care should be performed by the nursing system.
- Self care demands- Health is deviated in the children with nasogastric tube. Activities of daily living (Mouth care) are the demands of the children with nasogastric tube.
- Deficit- continuous effective self mouth care is the Deficit in the children with nasogastric tube .
- Nursing agency- Researcher is the Nursing agency, who provided the oral hygiene in order to improve and maintain the moist mouth. The level of dry mouth is measured by using modified Beck's oral assessment scale before and after oral hygiene.

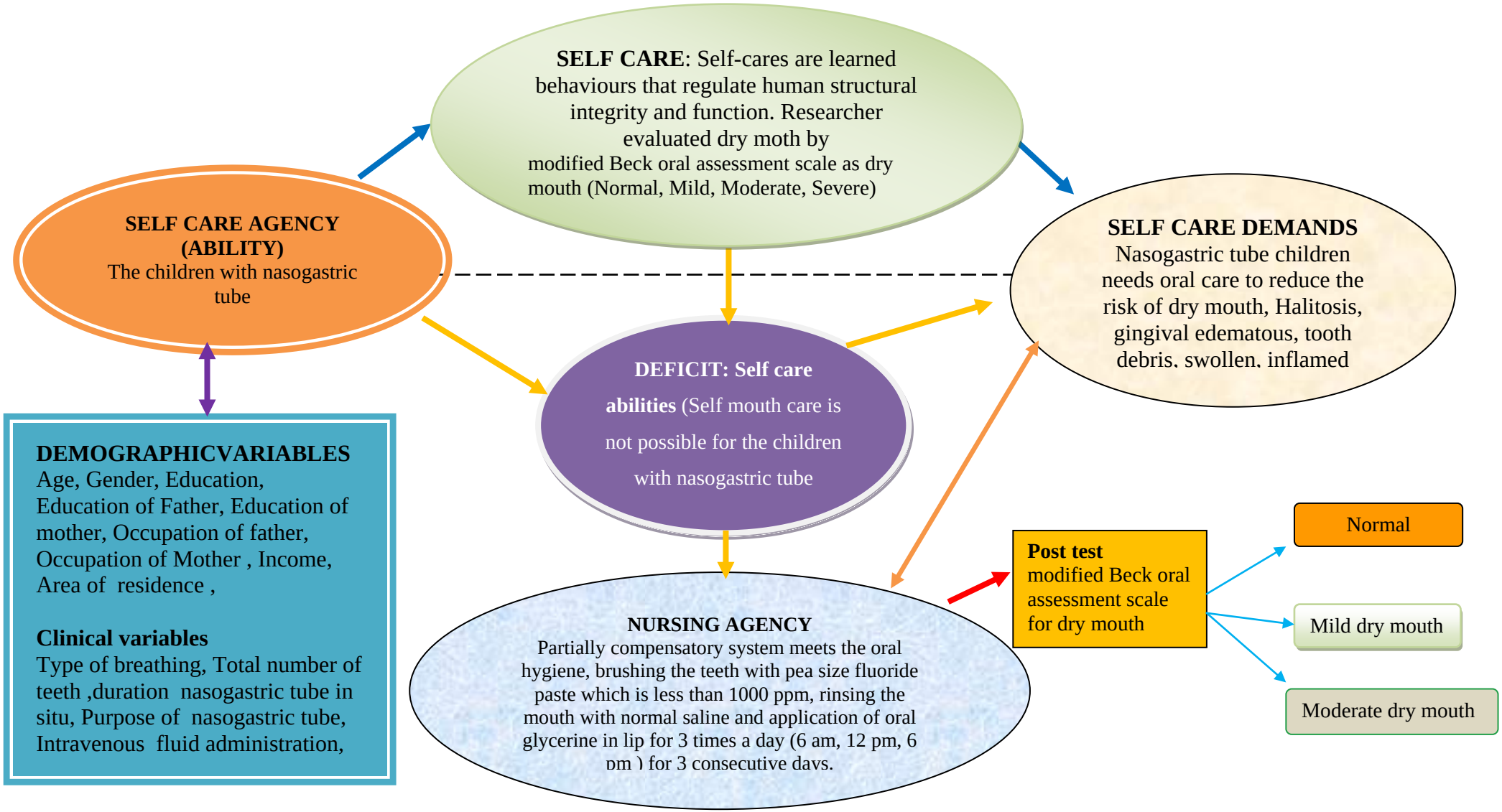


FIG.1. CONCEPTUAL FRAMEWORK BASED ON MODIFIED OREM'S SELF CARE THEORY (1991)

Methodology

CHAPTER - III

RESEARCH METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure for assembling valid and reliable data for investigation. This chapter provides a brief explanation of the method adopted by the investigator in this study. It includes the research approach, research design, and variables, setting of the study, population, sample and sample size, sampling technique, description of the tool, pilot study, data collection procedure and plan for data analysis.

The present study aimed to evaluate the effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai.

3.1 Research approach

The research approach is the most essential part of any research. The entire study is based on it. A research approach tells the researcher about the collection of data that is what to collect, when to collect, how to collect and how to analyze. It also helps the researcher with suggestions of possible conclusions to be drawn from the data.

According to Polit and Hungler (1999) evaluative research is an applied formate research that involves finding out how well a program, practice, procedure or policy is working. It involves the collection and analysis of information relating to the functioning of a program or procedure. With the aim of assessing its effectiveness.

A quantitative approach was adopted in the present study as the investigation is aimed at evaluating the effectiveness of oral hygiene on dry mouth among nasogastric tube children.

3.2 Research design

According to Kothari.C.R.(2003) "A research design is defined as the overall plan for collecting and analyzing data, including a specification for enhancing the internal and external validity of the study"

The research design is the plan, structure and strategy of investigations of answering the research question. It is the overall plan or blueprint the researcher select to carry out the study.

The research design selected for this study is Pre experimental - one group Pre test and Post test design.

Pre-test	Intervention	Post-test
O_1	X	O_2

Key:

O_1 - Pre-test assessment

X - Oral Hygiene – 3 times a day for 3 consecutive day

O_2 - Post-test assessment

3.3 Variable

The variable is "an attribute of a person or object that varies, that is taken a different values"

- Polit and Hunger

Independent Variable

The independent variable that stands alive and is not dependant on another. It is the cause for an action.

In this study, the independent variable is the oral hygiene.

Dependent Variable

Dependent variable is the effect of the action of the independent variable and cannot exist by itself.

In this study, the dependent variable are dry mouth among nasogastric tube children.

Socio Demographic Variables

Age, Sex, Education, educational qualification of Father, educational qualification of Mother, Occupation of father, Occupation of Mother, Area of Residence, income of Father,

Clinical variables

Total number of teeth, Type of breathing, duration nasogastric tube insitu. Intravenous fluid administration, Type of breathing,

3.4 Setting of the study

The setting is the physical location and condition in which data collection takes place in the study.

- Polit and Hunger.

The setting was selected based on acquaintance of the investigator with the institution, feasibility of conducting the study, availability of the sample, permission and proximity of the setting for investigation.

The study setting selected, for this study is paediatric wards, at Government Rajaji Hospital , Madurai.

3.5 Population

The population is defined as the entire aggregation of cases that meet a designed criterion.

Target population

The target population of this study is all children with nasogastric tube.

Accessible population

In this study accessible population is nasogastric tube children those who are admitted in paediatric ward at Government Rajaji Hospital ,Madurai.

3.6 Sample

The sample is a subset of the population selected to participate in a research study.

- Polit and Hunger

Children with nasogastric tube those who met the inclusion criteria, in Paediatric ward at Government Rajaji Hospital Madurai.

3.7 Sample size

In this study the sample size consists of 40 nasogastric tube children in Pediatric ward at Government Rajaji Hospital, Madurai.

3.8 Sampling Technique

The sampling technique of the study was selected by non- probability sampling- Consecutive sampling technique.

3.9 Criteria for sampling

Inclusion Criteria

- Children who were under treatment in Paediatric ward with nasogastric tube, at Government Rajaji Hospital, Madurai.
- Children who were available at the time of study.
- Parents those who have given consent to participate their children in the study.

Exclusion Criteria

- Children who had surgery in oral cavity.
- Mentally challenged children and unconscious children

3.10 Research tool and Technique

Data Collection tools are the procedures or instruments used by the researcher to observe or measure key variables in the research problem. Beck Oral assessment scale was selected to assess the level of oral hygiene among nasogastric tube children. It was considered to be the most appropriate instrument to elicit the response from subjects who able to understand Tamil.

The tool was organized into two sections. They were

Section – A: Deals with Socio demographic Variables and clinical variables

Section A consist of socio demographic variables of: Age, Sex, Education, educational qualification of Father, educational qualification of Mother, Occupation of father, Occupation of Mother, Area of Residence, Family income , Clinical Variables : Total number of teeth, Type of breathing, how long is the nasogastric tube placed, purpose of nasogastric tube.

Section – B:Modified Beck Oral Assessment Scale

Modified Beck Oral Assessment scale consist of checklist to assess the condition dry mouth , lips, Gingival and oral mucosa, Tongue, teeth and Saliva for nasogastric tube children.

3.11 Scoring Procedure

Section- A: There was no score given for socio demographic variables and clinical variables.

Section-B : Modified Beck Oral Assessment Scale – As per the condition of the each component scored as 1 – 4 as per the symptoms. As it consist of 6 component (6 x 4) 24 score as maximum and minimum is 6

Detailed Description of Scoring Procedure :

1) Lips

1. Smooth, Pink, moist.
2. Slightly wrinkled and by one or more isolated reddened areas.
3. Dry and somewhat swollen 1-2 isolated blisters.
4. Very dry edematous, entire lip is inflamed blister or ulceration Present.

2) Gingival and Oral Mucosa

1. Smooth, Pink, moist.
2. Pale and slightly dry and one or more isolated lesion, blisters or reddened area.
3. Dry and somewhat swollen generalized redness more than 2 lesion blisters or reddened areas.
4. Very dry and edematous, entire mucosa red and inflamed multiple ulcers present.

3) Tongue

1. Smooth, Pink, moist.
2. Slightly dry and 1-2 isolated reddened area. Papillae prominent mild white coat to tongue.
3. Dry and somewhat swollen generalized redness,1-2 lesion or blister.
4. Very dry and edematous, multiple blisters and ulcers.

4)Teeth

1. Clean and no debris, free of plaque.
2. Minimal debris, visible plaque.
3. Moderate debris, visible on enamel, visible cavities, heavy plaque.
4. Teeth covered with debris cavities, eroding the gums.

5) Saliva

1. Thin and watery and plentiful.
2. Decrease in the amount of saliva.
3. Saliva scanty and thicken than normal.
4. Saliva thick and ropy viscoid or mucid.

6) Halitosis

1. No halitosis
2. Mild halitosis
3. Moderate halitosis
4. Severe halitosis

Scoring Interpretation :

1 – 6	: Normal
7-12	: Mild Dry mouth
13 – 18	: Moderate dry mouth
19 -24	: Severe dry mouth.

3.12 Content Validity

"Validity is the degree to which an instrument measures what is intended tomeasure "

(Polit and Hungler. 1995)

The content validity was obtained from three Child Health nursing experts and two professors of Pediatric Medicine department and Pediatric Surgical department at Institute of Child Health and Research Centre, at Government Rajaji Hospital, Madurai. Minimal modification was made in the section A & Section B of the tool. After the change the tool was finalized. The modified tool was used for data collection and content validity was obtained.

3.13 Reliability

The accuracy and consistency of the research tool are called reliability. Beck's oral assessment scale-this standardized scale reliability is r=0.78.The Reliability of an instrument is the degree of consistency with which it measures the attribute and it is supposed to be measuring over a period of time. The tool was a standardized one which underwent test retest for reliability. Beck's oral assessment scale has been administered on two different occasions and the Reliability has been estimated using the karl pearson's correlation coefficient formula, that is r=0.78. Hence the tool is considered as reliable and used in this study.

3.14 Pilot Study

The pilot study was conducted in Pediatric ward at Government Rajaji Hospital, Madurai from 06.03.2017 to 11.03.2017 to test the feasibility of setting, samples, relevance and practicability of the intervention among 5 children those who are in nasogastric tube and not able to met the oral hygiene. Informed written and oral consent was obtained from the caregivers of nasogastric tube children. Subjects were selected by consecutive sampling technique. Pre assessment of level of dry mouth was done with the help of Beck's oral assessment scale. Oral care was provided three times a day for consecutive 3 days. On the fourth day morning post test was done with the same tool. The findings evidenced that, there was significant statistical difference in pre-test and post test scores on the level of dry mouth . The pilot study findings revealed that setting was feasible and tool was applicable to conduct the main study. The study was practically feasible to be conducted with a larger sample size.

3.15 Ethical Consideration

This study was conducted after the approval from the ethical committee, Madurai Medical College, Madurai – 20. All respondents were carefully informed about the purpose of the study and their part during the study and how the privacy was guarded. Ensured confidentiality of the study result. Written permission was obtained from all participants.

3.16 Procedure for Data Collection

After obtaining written permission from the Principal, College of Nursing, Director, Institute of Child Health and Research centre, Ethical committee on the first day of data collection, the investigator introduced himself and explained the nature and purpose of the study to the caregivers of children with nasogastric tube. Subjects

were selected based on the inclusion criteria. Consent was obtained from the care givers of the participate and confidentiality of their responses was assured. Subjects for the study were undergone the pre assessment of dry mouth by using modified Beck oral assessment scale. Then investigator administered the Oral care to children with nasogastric tube with the use of baby brush with Bass technique (an angle of 45^0 between the brush and teeth) with fluoride paste less than 1000ppm, rinse with normal saline and application of oral glycerine in lips for 3 times (6 am, 12 pm, 6 pm) per day for 3 consecutive days and after that the investigator was assessed the level of dry mouth on nasogastric tube children by means of post test using modified Beck oral assessment scale on forth day morning . Proposed study duration is 4 to 6 weeks.

3.17 Plan for Data Analysis

The data analysis involve the translation of information collected during the course of research project into an interpretable and managerial form. It involve the use of statistical procedures to give an organization and meaning to the data. Descriptive and inferential statistics use for data analysis. To compute the data, a master sheet was prepare by the investigator.

The data obtained were analyze using both descriptive and inferential statistics.

Descriptive statistics Include

1) Frequency and percentage distribution of the demographic variables
2) Mean and standard deviations of pre assessment and post assessment for level of oral hygiene

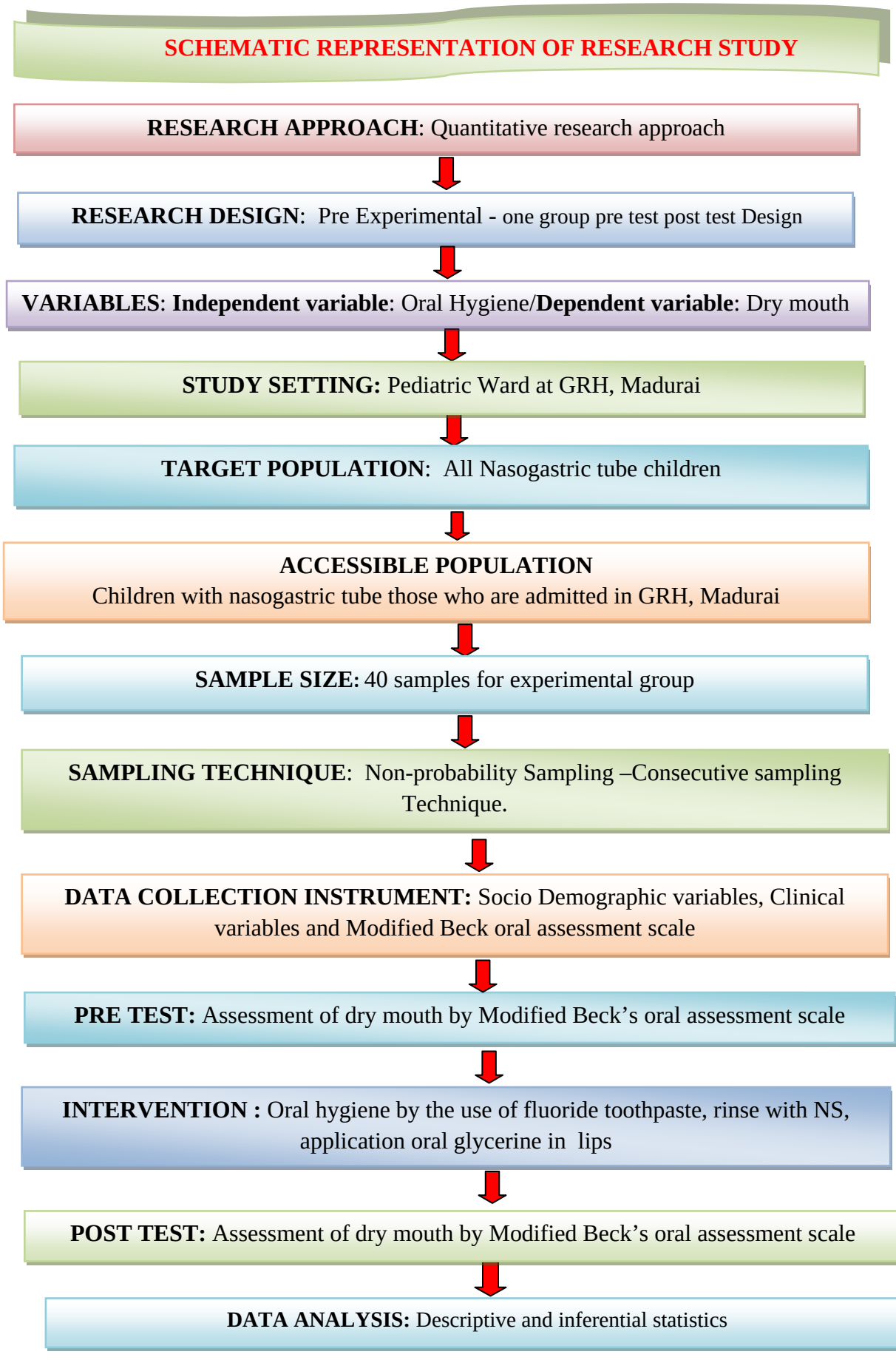
Inferential statistics include

1. Student paired ‘t’ test for comparison for pre assessment and post assessment to assess the effectiveness of oral hygiene.
2. Chi- square test to analyze the association between the socio variables with the post test.

3.18 Protection of Human Rights.

Research proposal was approved by the dissertation committee of College Of Nursing, Madurai Medical College, Madurai, Head of the Department of Pediatrics, in Institute of Child Health and Research Centre, at Government Rajaji Hospital, Madurai. An oral and written consent of each caregiver of nasogastric tube children can be obtained before starting the data collection. Positive benefits was explained to all the caregiver of nasogastric tube children.They was explain that they may withdraw from the study at any time without any penalty. Assurance can be given to the subjects that confidentiality to be maintained throughout the study.

3.19 Schematic Representation of Research Study



Data Analysis And Interpretation

CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the description of sample, analysis, and interpretation of the data collected to evaluate the achievement of the objectives of the study. The data collected were tabulated and described as follows, In this chapter the data collected were edited, tabulated, analyzed and interpreted. The findings were organized and presented in the following orderly sections.

The data collected were interpreted under the following sections

Section I

Distribution of nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai, according to their socio demographic variables and clinical variables.

Section II

Description of the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai.

Section-III

Effectiveness of oral hygiene on level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai.

Section-IV

Association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai,with their socio - demographic variables and clinical variables.

SECTION - I

Distribution of nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai, according to their socio demographic variables and clinical variables.

Table – 1

Frequency and percentage wise distribution of socio demographic variables and clinical variables among nasogastric tube children.

n = 40

S.No	Socio Demographic data	Frequency (f)	Percentage (%)
1.	**Age (in years):**		
	a. 3-6 years	20	50
	b. 6-9 years	15	37.5
	c. 9-12 year	5	12.5
2.	**Sex:**		
	a. Male	24	60
	b. Female	16	40
3.	**Education of child:**		
	a. No formal education	8	20
	b. Pre KG to 2 std	17	42.5
	c. 3 to 5 std	11	27.5
	d. 6 to 8 std	4	10
4.	**Educational status of fathers :**		
	a. No formal education	10	25
	b. Primary school education	14	35
	c. High school education	11	27.5
	d. Higher secondary	2	5
	e. Graduates/Professionals	3	7.5
5.	**Educational status of mothers:**		
	a. No formal education	7	17.5

S.No	Socio Demographic data	Frequency (f)	Percentage (%)
	b. Primary school education	16	40
	c. High school education	10	25
	d. Higher secondary	6	15
	e. Graduates/Professionals	1	2.5
6.	**Occupation of fathers:**		
	a. Govt. Employees	2	5
	b. Private employees	6	15
	c. Business	11	27.5
	d. Daily wages	21	52.5
	e. Un Employee	0	0
7.	**Occupation of mothers :**		
	a. House wives	24	60
	b. Govt. Employees	2	5
	c. Private employees	5	12.5
	d. Business	9	22.5
	e. Daily wages	0	0
8.	**Area of residence:**		
	a. Rural	17	42.5
	b. Suburban	11	27.5
	c. Urban	12	30
9	**Family income per month :**		
	a. Below Rs.5000	3	7.5
	b. Rs.5001-10000	20	50
	c. Rs.10001-15000	14	35
	d. Above Rs.15001	3	7.5

Above table reveals that socio demographic information of participated nasogastric tube children of the following study on evaluation of the effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai .

Considering the age wise distribution of children where 20 (50%) of them 3 -6 years of age, next 15 (37.5 %) were in 6 – 9 years of age and remaining 5 (12.5%) were in 9 – 12 years of age.

Regarding sex wise distribution majority 24 (60%) were Male children, and remaining 16 (40 %) were Female children.

Based on the education wise distribution of the children 10 (25 %) belong to no formal education, 17 (42.5 %) belong to Pre KG to 2 std, 11 (27.5 %) belong to 3 to 5 std, 4 (10 %) belong to 6 to 8 std.

Considering the education status of the fathers, 10 (25 %) fathers belong to no formal education, 14 (35 %) fathers belong to Primary school education, 11 (27.5 %) fathers belong to High school education, 2 (5 %) fathers belong to Higher secondary, 3 (7.5 %) fathers belong to Graduates / Professionals.

On the basis of education status of the mothers, 7 (17.5 %) mothers belong to no formal education, 16 (40 %) mothers belong to Primary school education, 10 (25 %) mothers belong to High school education, 6 (15 %) mothers belong to Higher secondary, 1 (2.5 %) mothers belong to Graduates / Professionals.

Based on the occupations of fathers, 2 (5%) fathers belong to Govt. Employee, 6 (15%) fathers belong to Private employee, 11 (27.5 %) fathers belong to Business, 21 (52.5%) fathers belong to daily wages.

Regarding the occupations of Mothers, 24 (60 %) Mothers belong to house wife, 2 (5%) Mothers belong to Govt. Employee, 5 (12.5%) Mothers belong to Private employee, 9 (22.5 %) Mothers belong to Business, none belongs to daily wages.

With respect to area of residence 17 (42.5) were Rural, 11 (27.5 %) were suburban and 12 (30 %) were urban.

With the view of family income per month, 3 (7.5%) families range below Rs 5000, 20 (50 %) families income ranges between Rs 5001 – 10000 , 14 (35 %) families income ranges between Rs 10001 – 15000, 3 (7.5 %) families range above Rs 15001.

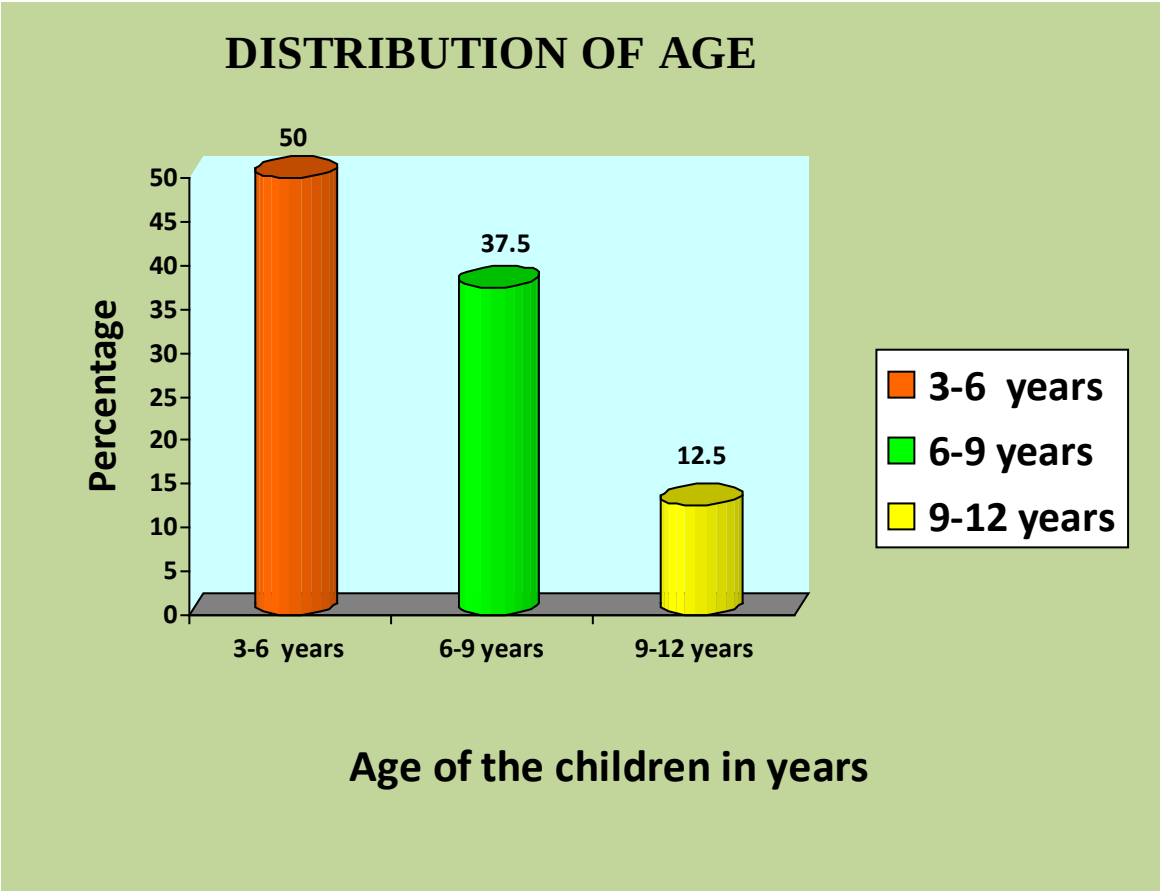


Fig.2. Percentage Distribution for Age of Children with nasogastric tube in pediatric ward.

The above cylindrical diagram shows that age wise distribution of children where 20 (50%) of them are between 3 -6 years of age, next 15 (37.5 %) are between 6 – 9 years of age and remaining 5 (12.5%) are between 9 – 12 years of age.

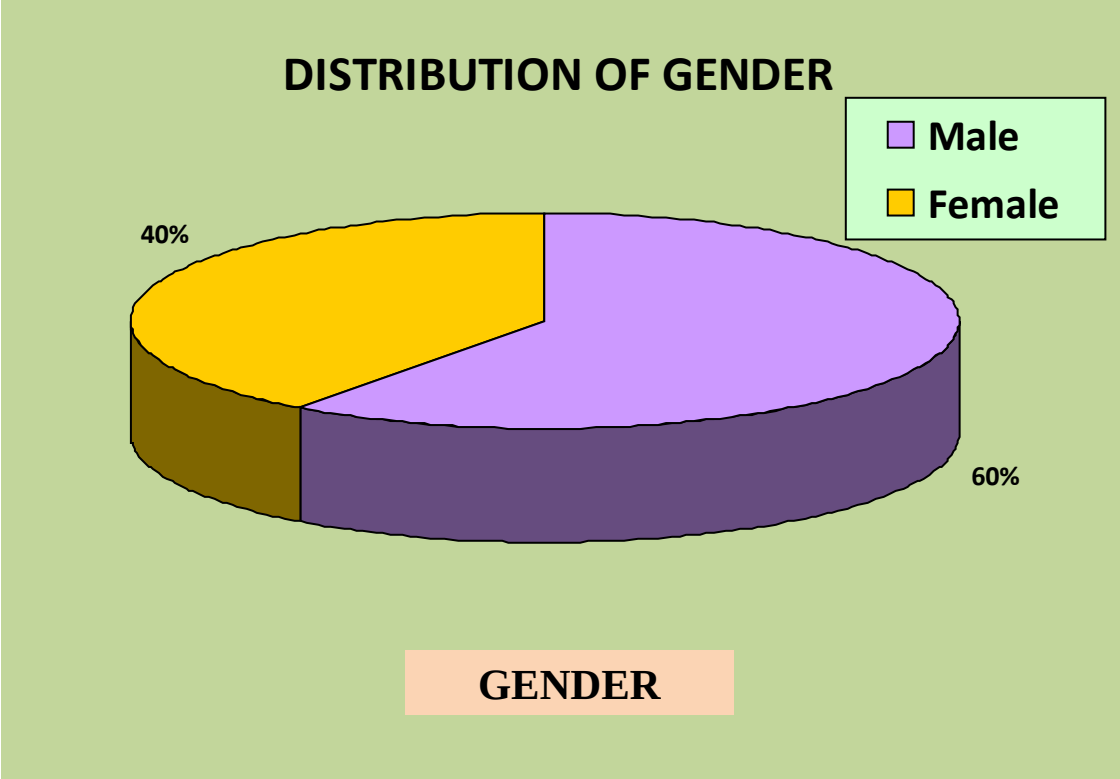


Fig.3 Percentage distribution of Gender of the Children with nasogastric tube in pediatric ward

The above Pie diagram shows that majority of subjects 24 (60%) belong to Male children, and remaining 16 (40 %) belong to Female children.

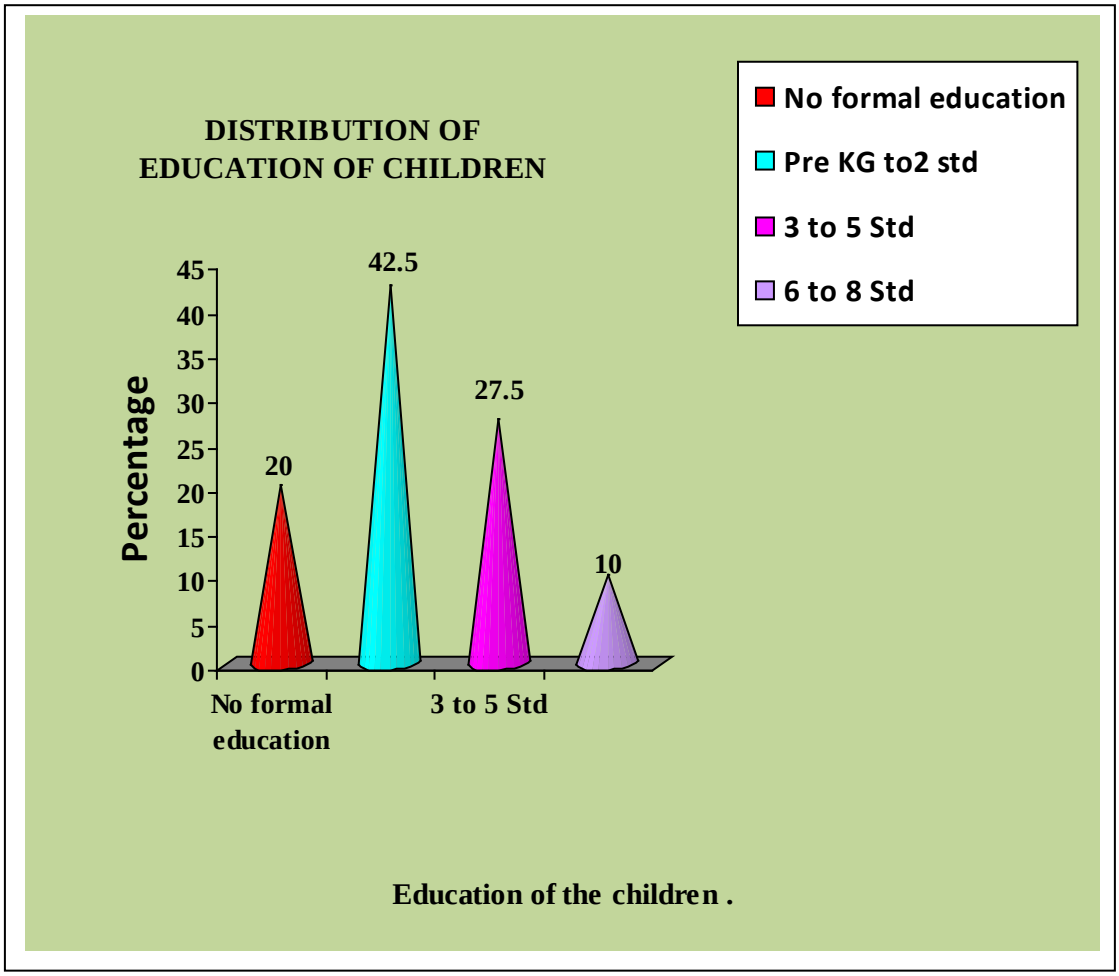


Fig.4. Percentage Distribution of Education of the children with nasogastric tube in pediatric ward

The above Cone diagram explains that the children education, 10 (25 %) belong to no formal education, 17 (42.5 %) belong to Pre KG to 2 std, 11 (27.5 %) belong to 3 to 5 std, 4 (10 %) belong to 6 to 8 std .

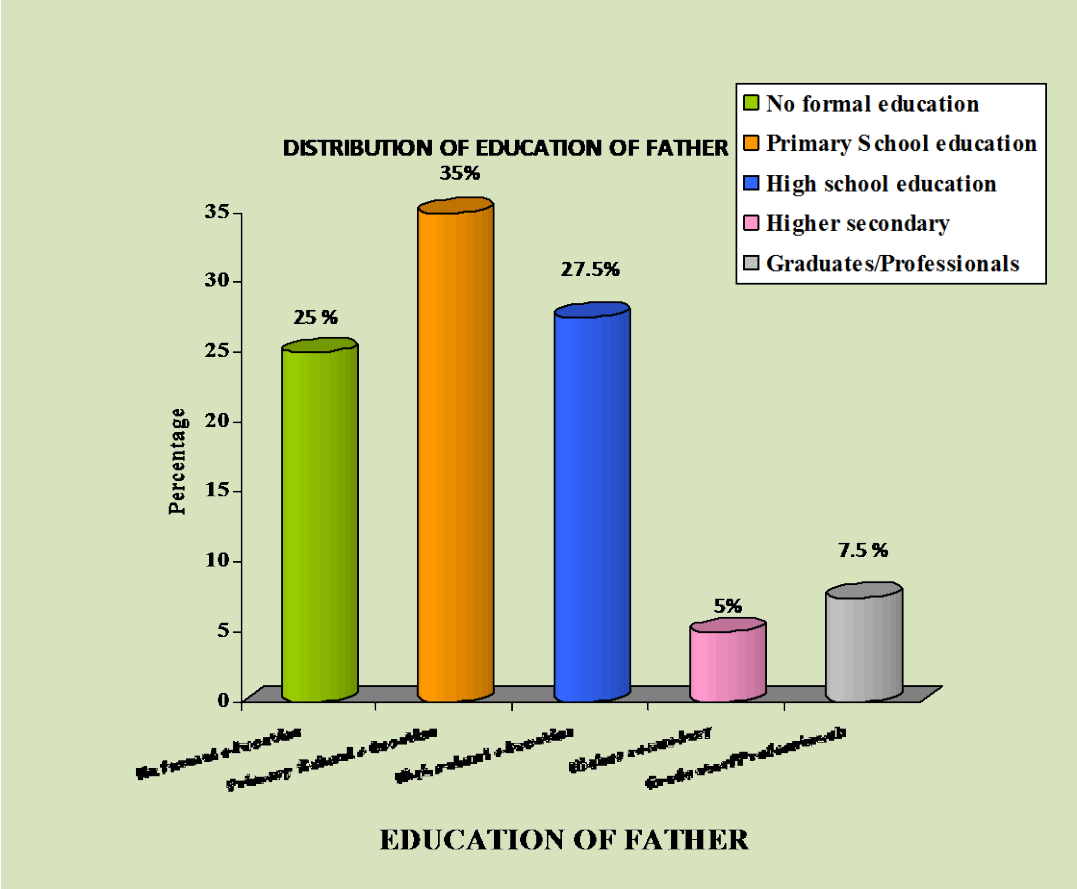


Fig.5.Percentage distribution of education of fathers of nasogastric tube children in pediatric ward.

The above Cylindrical diagram explains that the percentage wise distribution of nasogastric tube children according to their fathers education status , 10 (25 %) fathers belong to no formal education, 14 (35 %) fathers belong to Primary school education, 11 (27.5 %) fathers belong to High school education, 2 (5 %) fathers belong to Higher secondary, 3 (7.5 %) fathers belong to Graduates / Professionals.

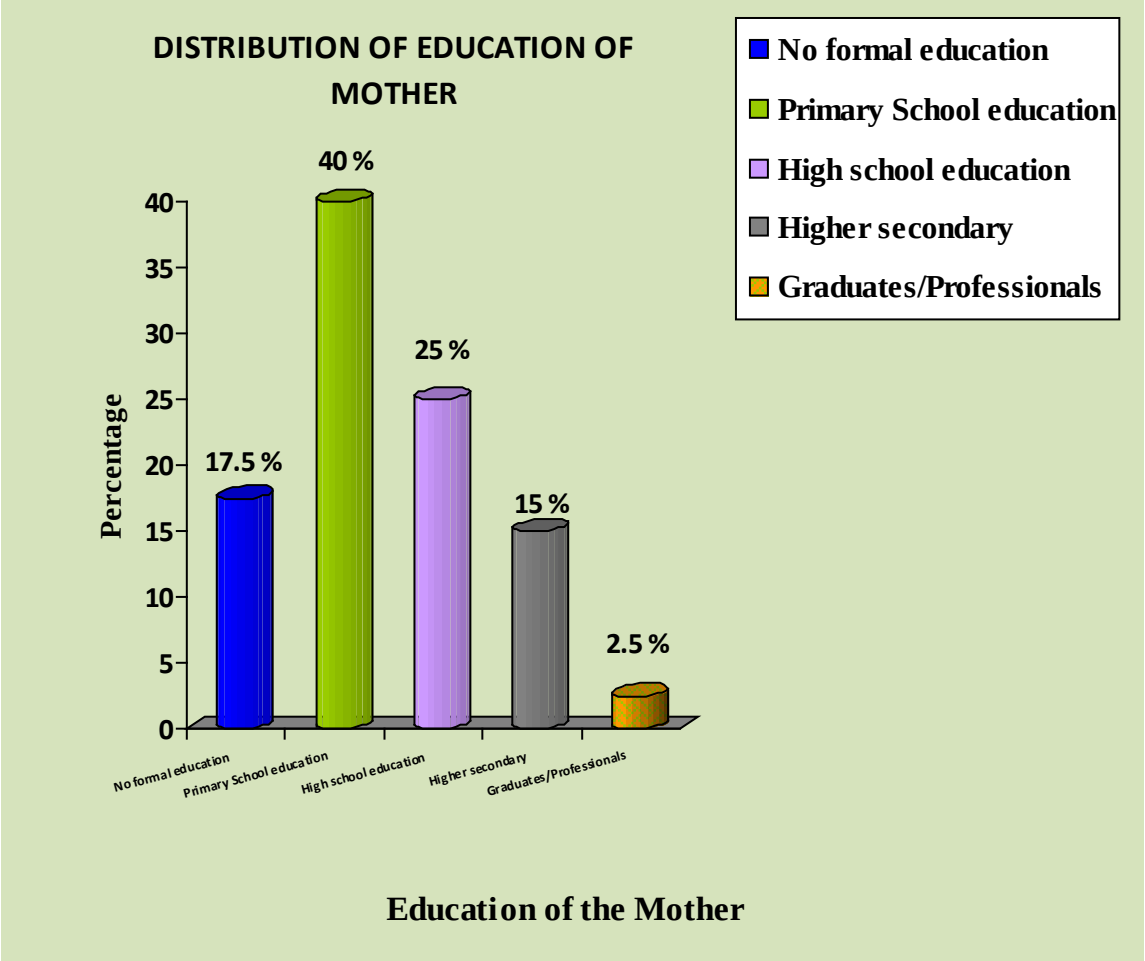


Fig.6. Percentage Distribution of Education of Mothers of nasogastric tube children in pediatric ward.

The above Cylindrical diagram explains that the percentage wise distribution of nasogastric tube children, according to their education status of mothers, 7 (17.5 %) mothers belong to no formal education, 16 (40 %) mothers belong to Primary school education, 10 (25 %) mothers belong to High school education, 6 (15 %) mothers belong to Higher secondary, 1 (2.5 %) mother belongs to Graduates / Professionals.

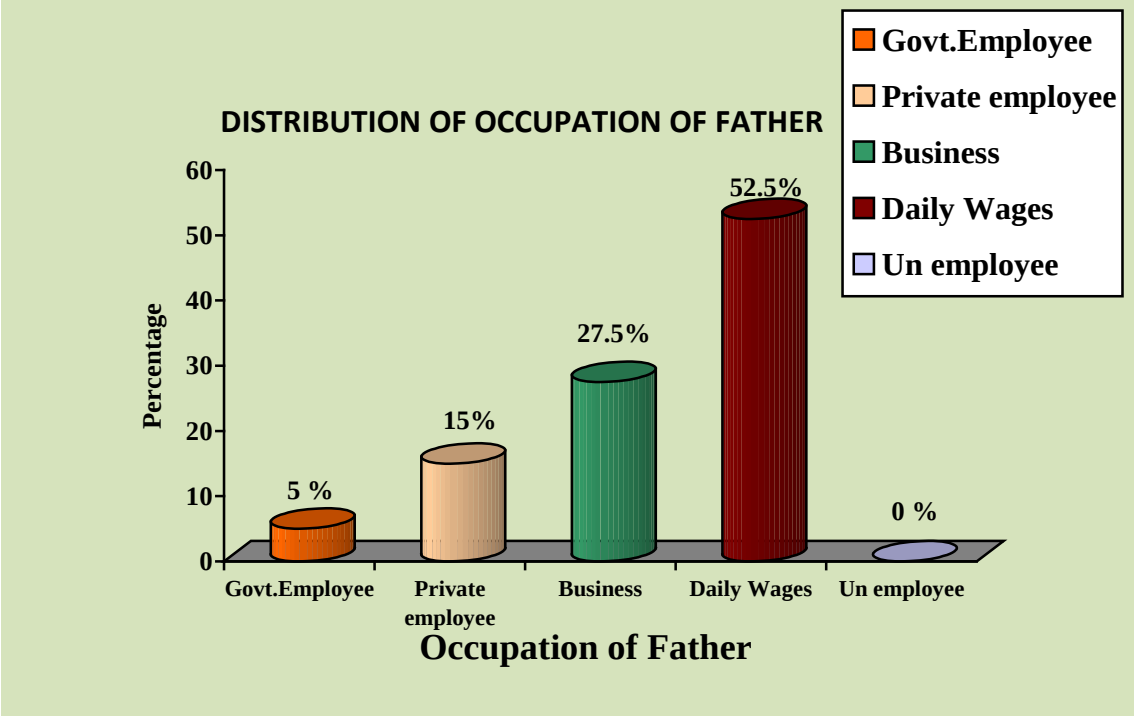


Fig.7. Percentage Distribution of Occupation of Fathers of nasogastric tube children in pediatric ward.

The above Cylindrical diagram explains percentage wise distribution of nasogastric tube children according to their occupation of fathers, 2 (5%) Fathers belong to Govt. Employee, 6 (15%) fathers belong to Private employee, 11 (27.5 %) fathers belong to Business, 21 (52.5%) fathers belong to daily wages, and Un employee is none.

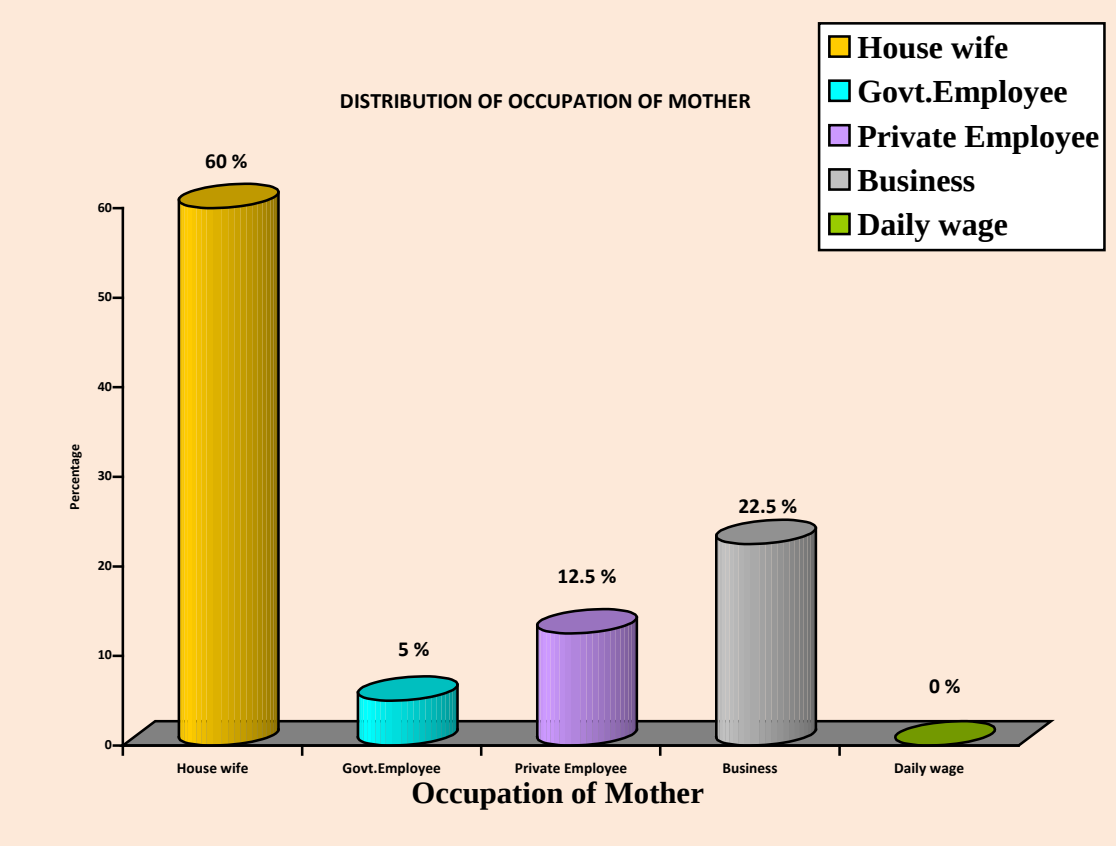


Fig.8. Percentage Distribution of Occupation of Mother of nasogastric tube children in pediatric ward.

The above Cylindrical diagram shows percentage wise distribution of nasogastric tube children according to their occupation of Mothers, 24 (60 %) mothers belong to house wife, 2 (5%) mothers belong to Govt. Employee, 5 (12.5%) mothers belong to Private employee, 9 (22.5 %) mothers belong to Business, and daily wage is none.

.

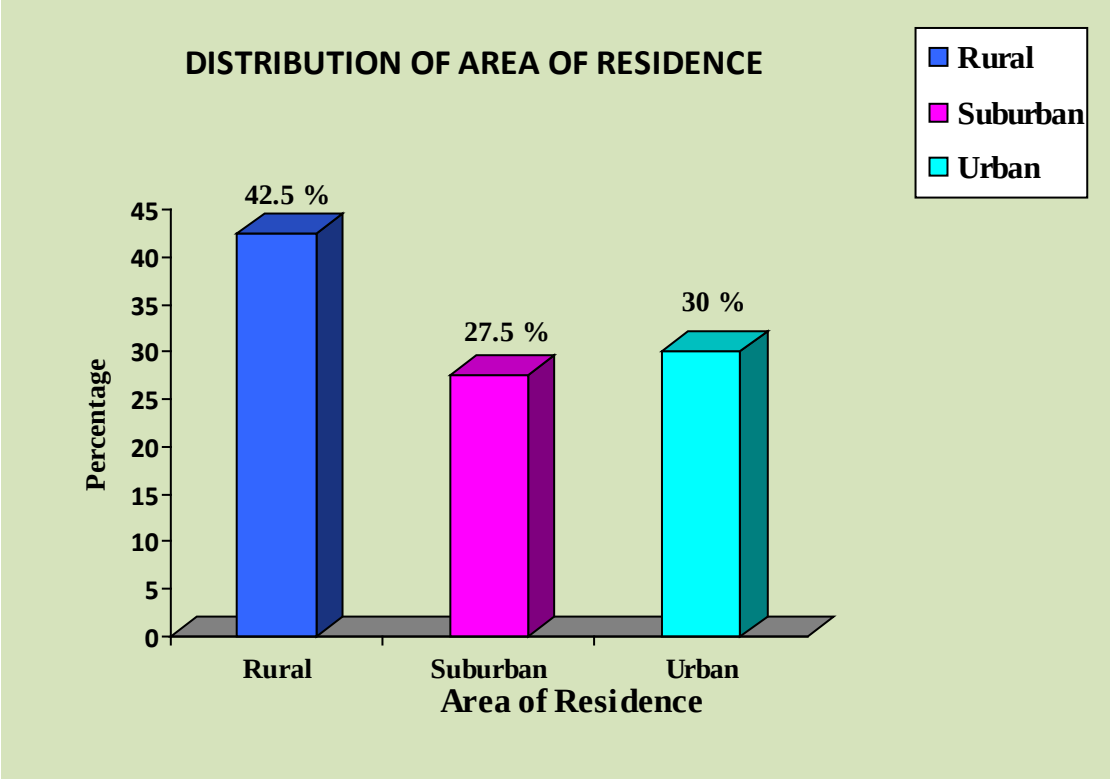


Fig.9.Percentage Distribution of Area of Residence of nasogastric tube children in pediatric ward

The above Bar diagram shows percentage wise distribution of children's area of residence 17 (42.5) children of Rural area , 11 (27.5 %) children of suburban area and 12 (30 %) children of urban area.

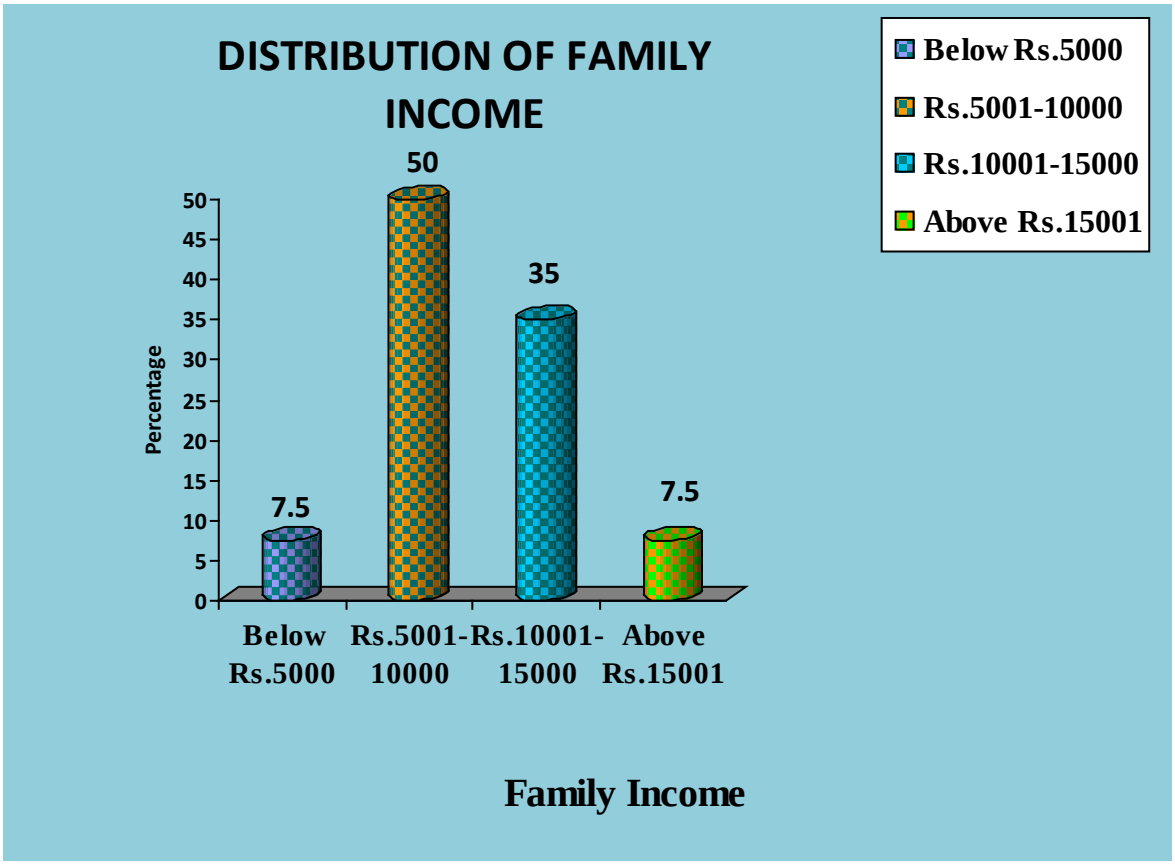


Fig.10. Percentage Distribution of Family income of nasogastric tube children in pediatric ward

The above Cylindrical diagram shows percentage wise distribution of nasogastric tube children according to their family income per month, 3 (7.5%) families range below Rs 5000, 20 (50 %) families range between Rs 5001 – 10000 , 14 (35 %) families range between Rs 10001 – 15000, 3 (7.5 %) families range above Rs 15001.

Table – 2

Frequency and percentage wise distribution clinical variables among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai.

n-40

S.No	Clinical variables	Frequency (f)	Percentage (%)
1.	**Total number of teeth :**		
	a. Less than 20	3	7.5
	b. 20	14	35
	c. More than 20	23	57.5
2.	**Type of breathing :**		
	a. Nose	3	7.5
	b. Mouth	23	57.5
	c. Nose and Mouth	14	35
3.	**Intravenous Fluid administration:**		
	a. **Yes**	33	82.5
	b. **No**	7	17.5
4.	**Purpose of nasogastric tube:**		
	a. Feeding	*23*	57.5
	b. Aspiration	*17*	42.5
	c. Both	*0*	0
	d. Others	*0*	0
5.	**How long is the nasogastric tube placed**		
	a. 1-2 days	22	55
	b. 3-4 days	17	42.5
	c. 5-6 days	1	2.5
	d. More than 7 days	0	0

According to the total number of teeth , 3 (7.5 %) has less than 20 teeth, 14 (35 %) has 20 teeth, and 23 (57.5 %) has more than 20 teeth.

Based on type of breathing 3 (7.5 %) of them were breathing Nose, 23 (57.5 %) of them were breathing Mouth and 14 (35 %) of them were breathing to Nose and Mouth.

Discussing the intravenous fluid administration ¾th of samples 33 (82.5%) had intravenous fluid and 7 (17.5 %) had no intravenous fluid.

According to the purpose of nasogastric tube 23 (57.5 %) of them for feeding purpose, 17 (42.5 %) of them for aspiration purpose.

Regarding the duration of nasogastric tube placed 22 (55 %) for 1 – 2 days, 17 (42.5 %) for 3 -4 days, 1 (2.5 %) for 5 -6 days and none (0 %) for more than 7 days.

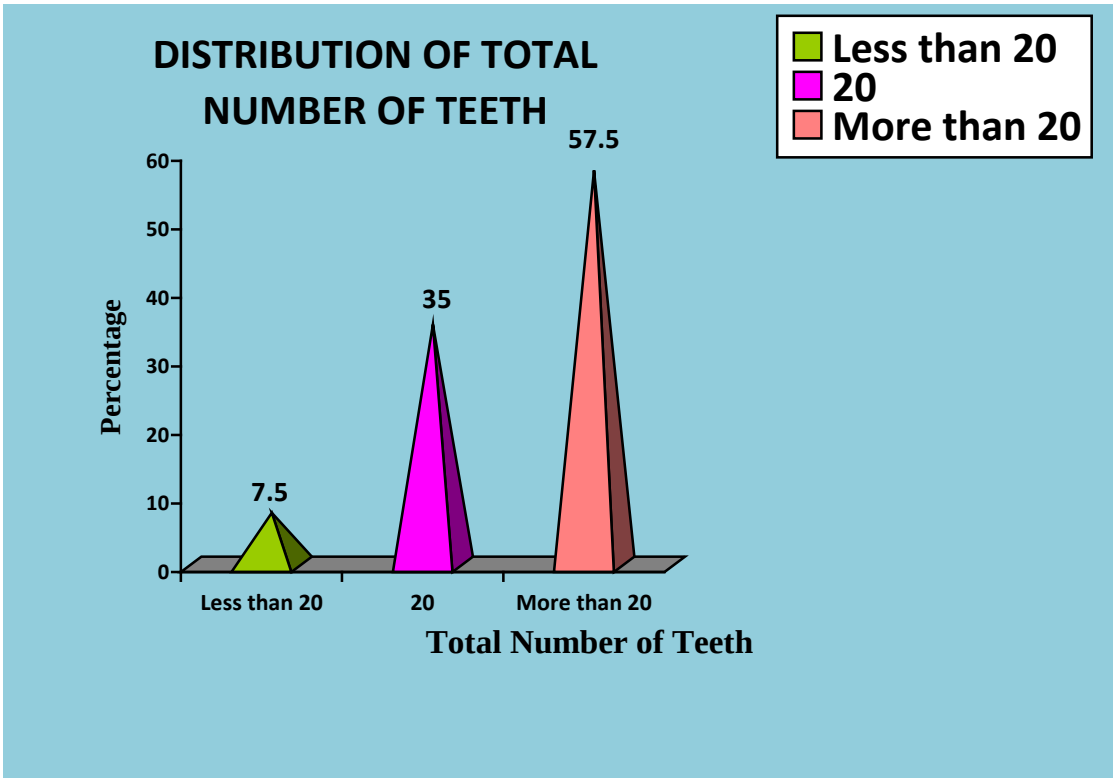


Fig.11. Percentage Distribution of Total number of teeth among nasogastric tube children in pediatric ward

The above Pyramid diagram shows percentage wise distribution of nasogastric tube children according to their total number of teeth , 3 (7.5 %) has less than 20 teeth, 14 (35 %) has 20 teeth, and 23 (57.5 %) has more than 20 teeth.

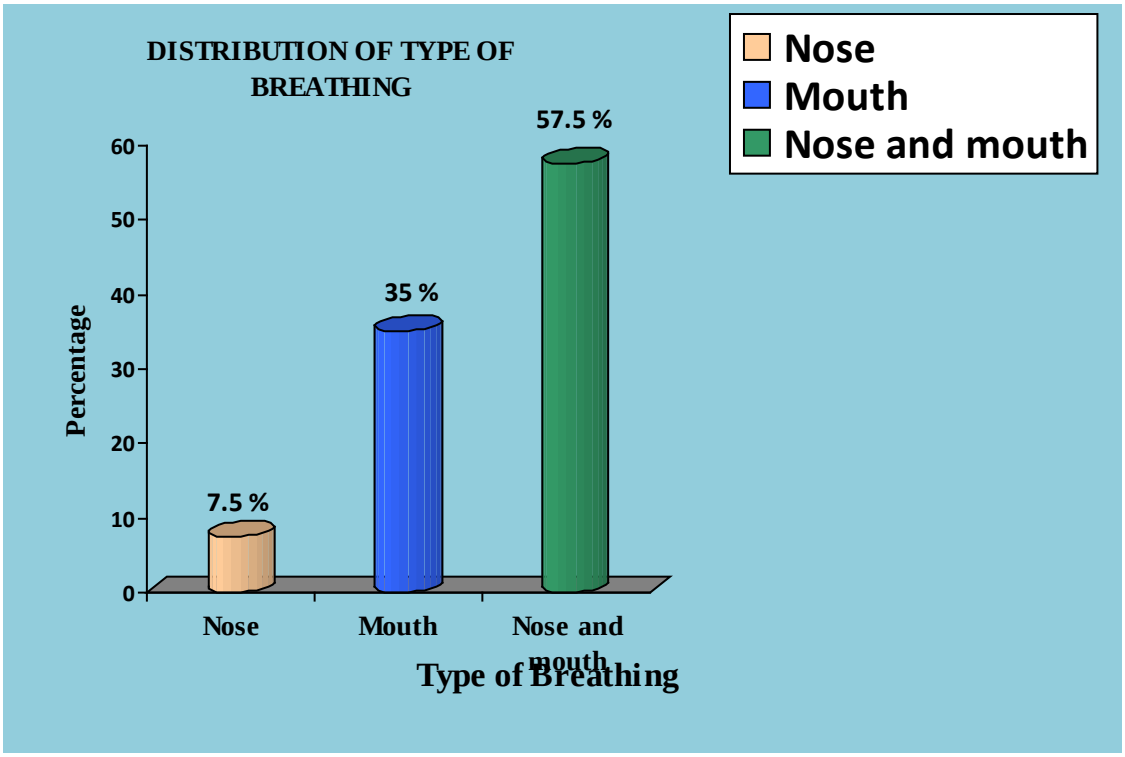


Fig.12. Percentage Distribution of type of breathing among nasogastric tube children in pediatric ward

The above Cylindrical diagram shows percentage wise distribution of nasogastric tube children according to their type of breathing 3 (7.5 %) of them were breathing Nose, 23 (57.5 %) of them were breathing Mouth and 14 (35 %) of them were breathing Nose and Mouth.

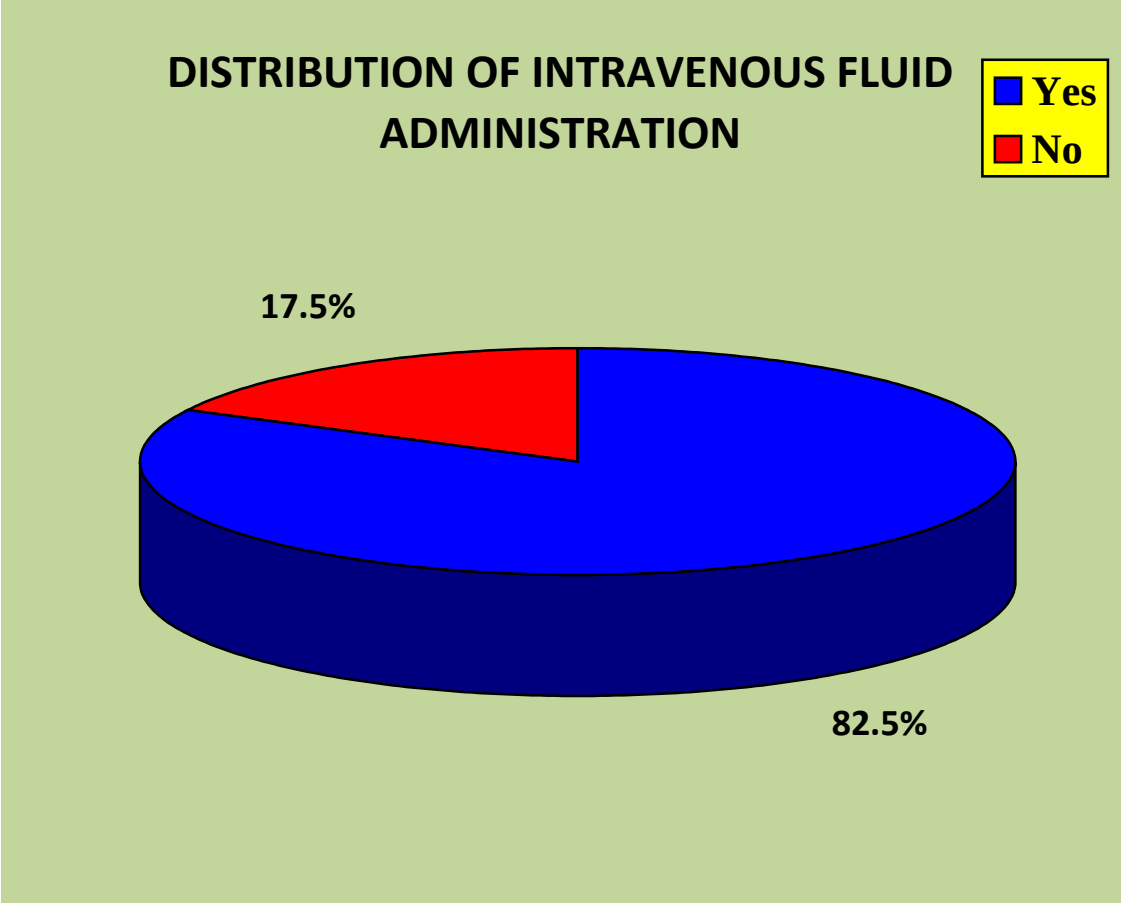


Fig.13. Percentage Distribution of Intravenous fluid administration among nasogastric tube children in pediatric ward

The above Pie diagram shows percentage wise distribution of nasogastric tube children according to their intravenous fluid administration nearly ¾th of samples 33 (82.5%) had intravenous fluid and 7 (17.5 %) had no intravenous fluid.

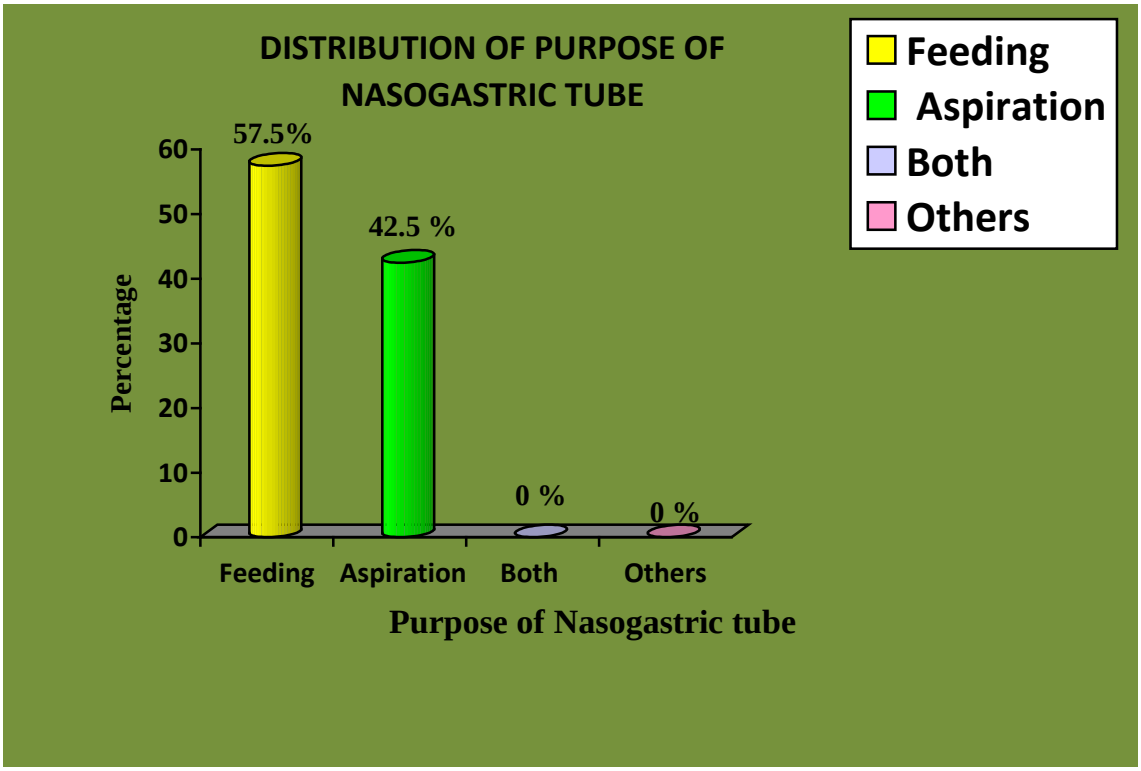


Fig.14. Percentage Distribution of purpose of nasogastric tube among nasogastric tube children in pediatric ward

The above Cylinder diagram shows percentage wise distribution of nasogastric tube children according to their purpose of nasogastric tube 23 (57.5 %) of them for feeding purpose, 17 (42.5 %) of them for aspiration purpose.

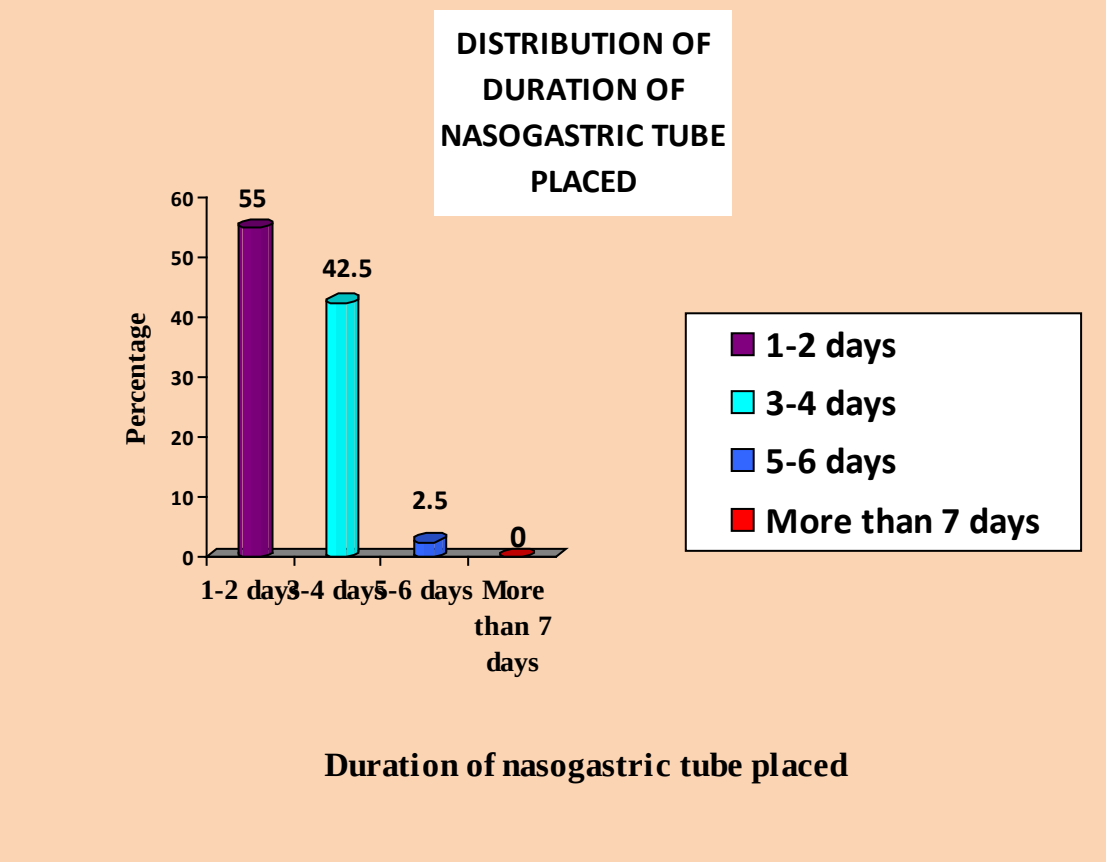


Fig.15. Percentage Distribution of duration of nasogstric tube placed among nasogastric tube children in pediatric ward

The above Cylinder diagram shows percentage wise distribution of nasogastric tube children according to their duration of nasogastric tube placed 22 (55 %) for 1 – 2 days, 17 (42.5 %) for 3 -4 days, 1 (2.5 %) for 5 -6 day, None (0 %) for more than 7.

SECTION II

Description of level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai

Table-3

Mean, SD and mean% distribution between pre and post test of oral care on improving the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai

n = 40

	Max score	Pre test			Post test			Effectiveness in mean %
		Mean	SD	Mean %	Mean	SD	Mean%	
Distribution to evaluate level of dry mouth	24	14.68	2.69	61	6.6	1.105	27.5	33.5

The above table 2 depicts the comparison of mean, standard deviation and Mean % between pretest and Post test. The pre test mean score was 14.68 with the standard deviation 2.69 and Mean % was 61. Whereas post test mean score was 6.6 with the standard deviation 1.105 and Mean % was 27.5. The effectiveness in mean % was 33.5.

Table-4

Frequency and percentage wise distribution of the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital Madurai.

n = 40

Level of Dry Mouth	Pre test		Post test	
	f	%	f	%
Normal	0	0	28	70
Mild	4	10	12	30
Moderate	33	82.5	0	0
Severe	3	7.5	0	0
Total	40	100	40	100

In Pre test 4 (10 %) had mild dry mouth, 33 (82.5 %) had moderate dry mouth, and 3 (7.5 %) had severe dry mouth. In Post test 28 (70 %) had Normal mouth, remaining 12 (30%) had mild dry mouth. Hence no one was scored in Moderate dry mouth and severe dry mouth.

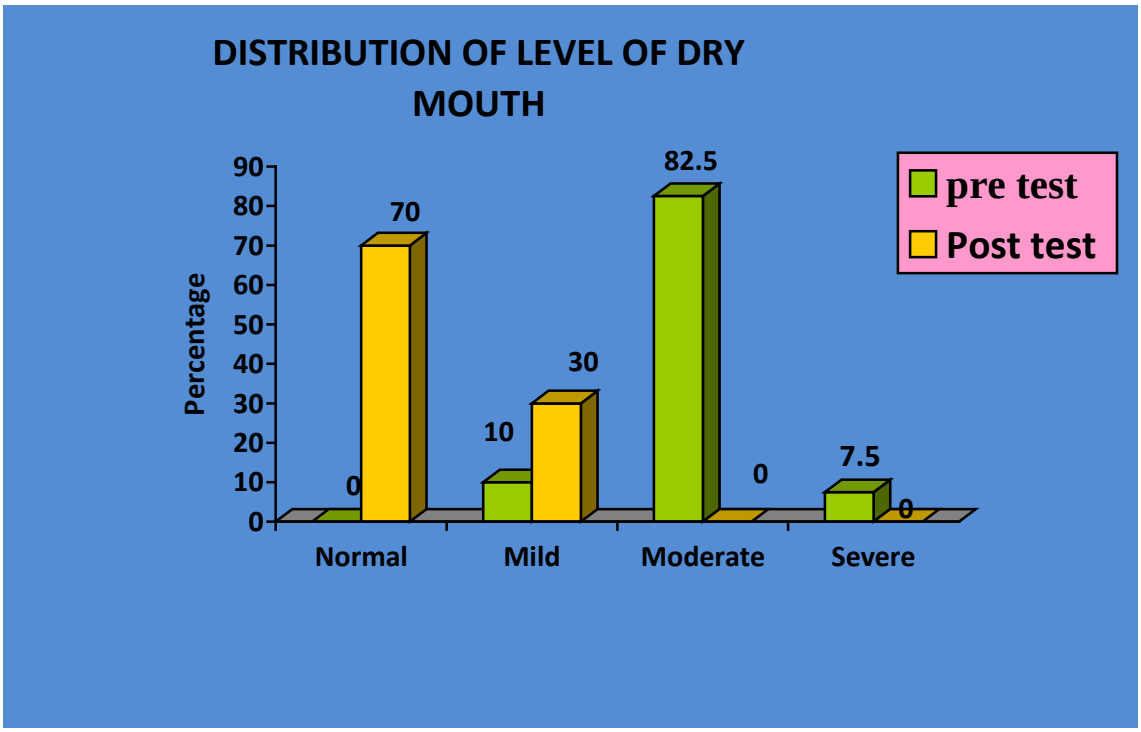


Fig .16. Percentage Distribution of Pre and Post test Level of Dry mouth among nasogastric tube children in pediatric ward

The above Bar diagram showing percentage wise distribution of Pre and Post test level of Beck Oral assessment scale, in Pre test 4 (10 %) had mild dry mouth, 33 (82.5 %) had moderate dry mouth, and 3 (7.5 %) had severe dry mouth. In Post test 28 (70 %) had Normal mouth, remaining 12 (30%) had mild dry mouth. Hence no one was scored in Moderate dry mouth and severe dry mouth.

SECTION III

Effectiveness of oral hygiene on level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital ,Madurai

Table-5

Paired "t"-test showing the effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital ,Madurai

n = 40

Overall	Pre test		Post test		Mean difference	't'-value	P-value
	Mean	SD	Mean	SD			
Effectiveness of oral hygiene on dry mouth	14.675	2.69	6.6	1.104	8.075	23.98	**P<0.001*** **

*-P<0.05, significant and **-P<0.01 & ***-P<0.001, Highly significant

The above table shows that the level of dry mouth regarding pretest and posttest mean score is 14.675 and 6.6 respectively. Standard deviation score is 2.69 and 1.104 respectively. Mean difference between the pretest and posttest is 8.075. Paired 't' test value 23.98. is much higher than the table value at P<0.001 level of significance. So the researcher observed that there is a highly significant decreased level of dry mouth of nasogastric tube children in Pediatric ward at Government Rajaji Hospital, Madurai and also oral hygiene is very mush effective.

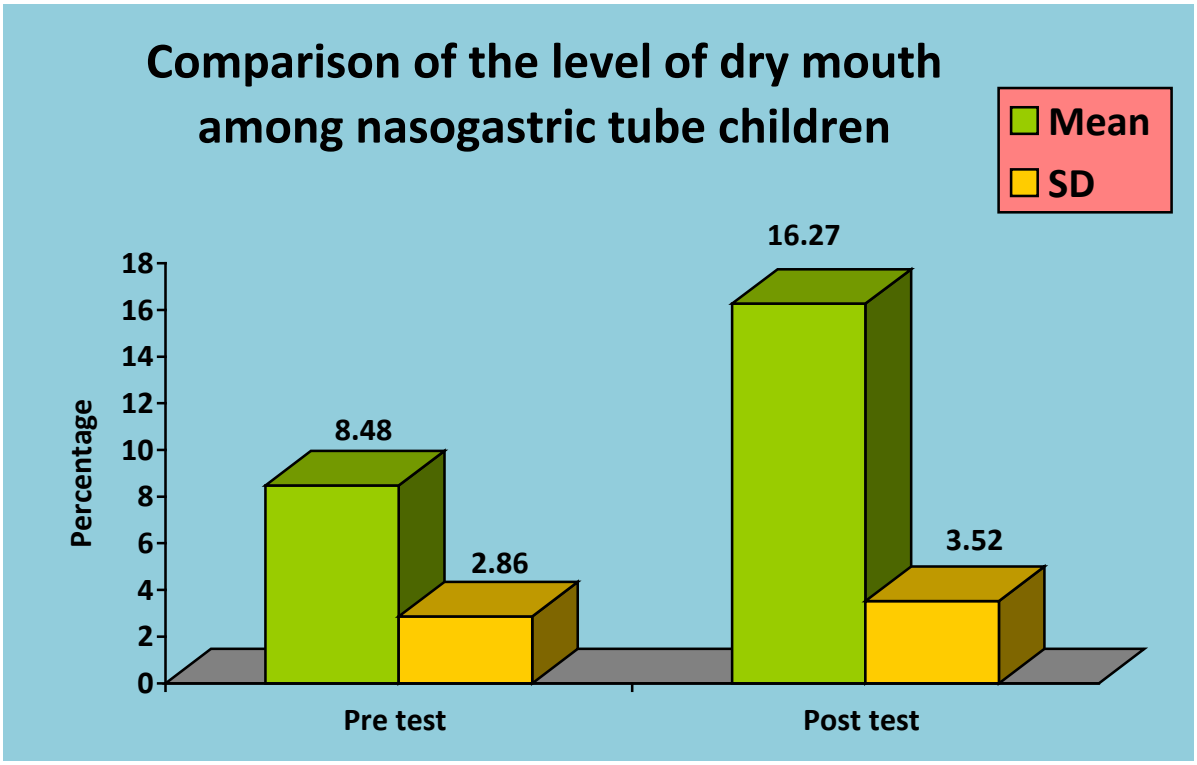


Fig .17. Comparison of the level of dry mouth among nasogastric tube children.

Figure 18 showing the comparison of the level of dry mouth among nasogastric tube children. The mean pretest dry mouth score was 8.48 with a standard deviation of 2.86 and the mean posttest dry mouth score was 16.27 with a standard deviation 3.52. The obtained paired ‘t’ value 23.98 which was higher than the table value, so the researcher observed that there is a highly significant

SCETION IV

Association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital ,Madurai with their selected sociodemographic variables and clinical variables.

Table- 6

Association between level of dry mouth in post test and selected socio demographic variables.

n = 40

S. No	Socio demographic variables	Normal		Mild		Moderate		Severe		$\chi 2$	p-value
		f	%	f	%	f	%	f	%		
1	**Age (in years)**										
	a. 3-6 years	15	37.5	5	12.5	-	-	-	-	0.56	0.757
	b. 6-9 years	10	25	5	12.5	-	-	-	-	(df=2)	NS
	c. 9-12 year	3	7.5	2	5	-	-	-	-		
2	**Sex**										
	a. Male	19	47.5	5	12.5	-	-	-	-	2.40	0.121
	b. Female	9	22.5	7	17.5	-	-	-	-	(df=1)	NS
3	**Education of child**										
	a. No formal education	4	10	4	10	-	-	-	-		
	b. Pre KG to 2 standard	13	32.5	4	10	-	-	-	-	3.36	0.340
	c. 3 to 5 standard	9	22.5	2	5	-	-	-	-	(df=3)	NS
	d. 6 to 8 standard	2	5	2	5	-	-	-	-		
4	**Educational status of father**										
	a. No formal education	6	15	4	10	-	-	-	-		
	b. Primary school education	12	30	2	5	-	-	-	-	6.84	0.144
	c. High school education	8	20	3	7.5	-	-	-	-	(df=4)	NS
	d. Higher secondary	0	0	2	5	-	-	-	-		
	e. Graduates/Professionals	2	5	1	2.5	-	-	-	-		

S. No	Socio demographic variables	Normal		Mild		Moderate		Severe		$\chi 2$	p-value
		f	%	f	%	f	%	f	%		
5	**Educational status of mothers**										
	a. No formal education	7	17.5	0	0	-	-	-	-		
	b. Primary school education	11	27.5	5	12.5	-	-	-	-	5.85	0.210
	c. High school education	6	15	4	10	-	-	-	-	(df=4)	NS
	d. Higher secondary	4	10	2	5	-	-	-	-		
	e. Graduates/Professionals	0	0	1	2.5	-	-	-	-		
6	**Occupation of father**										
	a. Govt.Employee	2	5	0	0	-	-	-	-	2.06	0.560
	b. Private employee	3	7.5	3	7.5	-	-	-	-	(df=3)	NS
	c. Business	8	20	3	7.5	-	-	-	-		
	d. Daily wages	15	37.5	6	15	-	-	-	-		
	e. Un Employee	0	0	0	0	-	-	-	-		
7	**Occupation of mother**										
	a. House wife	15	37.5	9	22.5	-	-	-	-	9.40	0.024*
	b. Govt.Employee	0	0	0	0	-	-	-	-	(df=3)	S
	c. Private employee	0	0	2	5	-	-	-	-		
	d. Business	4	10	1	2.5	-	-	-	-		
	e. Daily wages	9	22.5	0	0						
8	**Area of residence**										
	a. Rural	12	30	5	12.5	-	-	-	-	1.51	0.469
	b. Suburban	9	22.5	2	5	-	-	-	-	(df=2)	NS
	c. Urban	7	17.5	5	12.5	-	-	-	-		
9	**Family income per month**										
	a. Below Rs.5000	2	5	1	2.5	-	-	-	-	0.05	0.997
	b. Rs.5001-10000	14	35	6	15	-	-	-	-	(df=3)	NS
	c. Rs.10001-15000	10	25	4	10	-	-	-	-		
	d. Above Rs.15001	2	5	1	2.5	-	-	-	-		

-P<0.05 , significant and **-P<0.01 &-P<0.001 , Highly significant**

The above table 6 shows the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital ,Madurai with their selected socio demographic variables. As per Chi square analysis , there is significant association between the posttest dry mouth level and occupation of mother, And there is no significant association between the posttest dry mouth level and other socio demographic variable such as Children Age, Sex, Education of child, Educational status of mother, Educational status of Father, Area of residence and family income per month.

Table- 7

Association between level of dry mouth in post test and selected clinical variables

n = 40

S. No	Clinical variables	Normal		Mild		Moderate		Severe		$\chi 2$	p-value
		f	%	f	%	f	%	f	%		
1	**Total number of teeth :**										
	Less than 20	2	5	1	2.5	-	-	-	-	0.401	0.818
	20	9	22.5	5	12.5	-	-	-	-	(df=2)	NS
	More than 20	17	42.5	6	15	-	-	-	-		
2	**Type of breathing :**										
	None	2	5	1	2.5	-	-	-	-	0.76	0.685
	Mouse	15	37.5	8	20	-	-	-	-	(df=2)	NS
	Nose and Mouth	11	27.5	3	7.5	-	-	-	-		
3	**Intravenous Fluid administration:**									0.008	0.928
	Yes	23	57.5	10	25	-	-	-	-	(df=1)	NS
	No	5	12.5	2	5	-	-	-	-		
4	**Purpose of nasogastric tube:**										
	Feeding	18	45	5	12.5	-	-	-	-	1.76	0.185
	Aspiration	10	25	7	7.5	-	-	-	-	(df=1)	NS
	Both	0	0	0	0	-	-	-	-		
	Others	0	0	0	0	-	-	-	-		
5	**Duration of nasogastric tube placed :**										
	1-2 days	17	42.5	5	12.5	-	-	-	-	3.11	0.211
	3-4 days	11	27.5	6	15	-	-	-	-	(df=2)	NS
	5-6 days	0	0	1	2.5	-	-	-	-		
	More than 7 days	0	0	0	0	-	-	-	-		

-P<0.05 , significant and **-P<0.01 &-P<0.001 , Highly significant**

The above table 7 shows the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital ,Madurai with their selected clinical variables. As per Chi square analysis , there is no significant association between the posttest dry mouth level and other clinical variable such as total number of teeth, type of breathing, intravenous fluid administration, purpose of nasogastric tube , duration of nasogastric tube placed.

Discussion

CHAPTER – V

DISCUSSION

Based on the objectives of the study and hypothesis, this chapter deals with detailed discussion of the results of the data interpreted from the statistical analysis. The present study was focused to evaluate the effectiveness of oral hygiene mouth care on dry mouth among nasogastric tube children in Pediatrics ward at Government Rajaji Hospital, Madurai. Nasogastric tube children at Pediatric ward are at greater risk for dry mouth than other children due to the mouth breathing, nil oral , poor oral care , Self-care activities are also deficit in them. Oral hygiene was effective in reducing the dry mouth.

In this study, Researcher adopted a Quantitative approach, Pre experimental - One group pre-test post test design and 40 samples were selected by consecutive sampling technique. Modified Orem's self care theory was adopted. Pre test conducted with Modified Beck's oral assessment scale. Oral hygiene was given for three days and post test was conducted with the same tool.

Statement of the Problem

"A Study to evaluate the effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai .

Objectives of the Study were

1. To assess the level of dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital.
2. To evaluate the effectiveness of Oral Hygiene on Dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital.

3. There is a significant association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai, with their selected socio demographic variables and clinical variables.

The Following Hypotheses Were

H_1: There is a significant difference between the pre test and post test level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai.

H_2**:** There is a significant association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai, with their selected socio demographic variables and clinical variables.

5.1 Description of nasogastric tube children according to their socio demographic variables.

- Considering the age wise distribution of children where 20 (50%) of them 3 -6 years of age, next 15 (37.5 %) were in 6 – 9 years of age and remaining 5 (12.5%) were in 9 – 12 years of age.
- Regarding sex wise distribution majority 24 (60%) were Male children, and remaining 16 (40 %) were Female children.
- Based on the education wise distribution of the children 10 (25 %) belong to no formal education, 17 (42.5 %) belong to Pre KG to 2 standard, 11 (27.5 %) belong to 3 to 5 standard , 4 (10 %) belong to 6 to 8 standard.
- Considering the education status of fathers ,10 (25 %) fathers belong to no formal education, 14 (35 %) fathers belong to Primary school education, 11

(27.5 %) fathers belong to High school education, 2 (5 %) were belongs to Higher secondary, 3 (7.5 %) fathers belong to Graduates / Professionals.

- On the basis of education status of mothers, 7 (17.5 %) mothers belong to no formal education, 16 (40 %) mothers belong to Primary school education, 10 (25 %) mothers belong to High school education, 6 (15 %) mothers belong to Higher secondary, 1 (2.5 %) mothers belong to Graduates / Professionals.
- Based on the occupation of fathers, 2 (5%) fathers belong to Govt. Employee, 6 (15%) fathers belong to Private employee, 11 (27.5 %) fathers belong to Business, 21 (52.5%) fathers belong to daily wages.
- Regarding on the occupation of Mothers, 24 (60 %) mothers belong to house wives, 2 (5%) mothers belong to Govt. Employee, 5 (12.5%) mothers belong to Private employee, 9 (22.5 %) belong to Business, 0 % belong to daily wages.
- With respect to area of residence 17 (42.5) were Rural, 11 (27.5 %) were suburban and 12 (30 %) were urban.
- With the view of family income per month, 3 (7.5%) families range below Rs 5000, 20 (50 %) families range between Rs 5001 – 10000,14 (35%) families range between Rs 10001 – 15000,3 (7.5 %) families range above Rs 15001.

Discussion of clinical variables

- According to the total number of teeth, 3 (7.5 %) have less than 20 teeth, 14 (35 %) have 20 teeth, and 23 (57.5 %) have more than 20 teeth.
- Based on type of breathing, 3 (7.5 %) of them were breathing Nose, 23 (57.5 %) of them were breathing Mouth and 14 (35 %) of them were breathing to Nose and Mouth.

- Discussing the intravenous fluid administration ¾th of samples 33 (82.5%) had intravenous fluid and 7 (17.5 %) had no intravenous fluid.
- According to the purpose of nasogastric tube , 23 (57.5 %) of them for feeding, 17 (42.5 %) of them for aspiration purpose.
- Regarding the duration of nasogastric tube placed, 22 (55 %) for 1 – 2 days, 17 (42.5 %) for 3 -4 days, 1 (2.5 %) for 5 -6 days and none (0%) for more than 7 day.

5.2 Discussion of the study based on its objectives

The first objective was to assess the level of dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital.

The present study reveals that in the Pre test 4 (10 %) had mild dry mouth, 33 (82.5 %) had moderate dry mouth, and 3 (7.5 %) had severe dry mouth, In Post test 28 (70 %) had Normal mouth, remaining 12 (30%) had mild dry mouth. Hence no one was scored in Moderate dry mouth and severe dry mouth.

These findings congruent with the study done by James Guggenheimer, D.D.S.; Paul A. Moore (2016) done a Index Medicus– review of clinical and scientific reports of dry mouth in the dental and medical literature during the past 20 years in United states. It is estimated that 15 percent of patients with rheumatoid arthritis, 25 percent of those with systemic sclerosis and 30 percent of those with systemic lupus erythematosus may develop dry mouth.

This finding was also supported by a study done by Jacqueline M. Plemons, (2015) conducted a descriptive study on prevalence of dry mouth among hospitalized children at City Hope National medical centre , California. 200 children were enrolled in the study , it was estimated that 80% of the hospitalized children had dry mouth due to treatment, medications, poor oral care and others medical conditions.

The second objective was evaluate the effectiveness of Oral Hygiene on Dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital, Madurai.

The level of dry mouth regarding pretest and posttest mean score is 14.675 and 6.6 respectively. Standard deviation score is 2.69 and 1.104 respectively. Mean difference between the pretest and posttest is 8.075. Paired 't' test value 23.98 is much higher than the table value at $P<0.001$ level of significance. So the researcher observed that there is a highly significant decreased level of dry mouth of nasogastric tube children in Pediatric ward at Government Rajaji Hospital, Madurai and also oral hygiene is very mush effective.

This finding was also supported Chang SC, Chao MS, Chen MH.(2015) conducted cross sectional research study on children with nasogastric tube feeding and the number of nasogastric tube-related complications at University of Michigal, Hawai. 127 hospital admitted children were selected for the study . Finding showed that 81.3 % children had dry mouth in which 12.7 % had halitosis, 9.4 % had cracked lips, 7.45 % had coated tongue.

This study finding was consistent with the study finding of Nargis Ahamed and Debarchana Mondal (2014) was conducted a descriptive study on Nasogastric tube related complication among post operative children at selected hospital Kolkata. 50 post post operative children with Nasogastric tube for selected. The study revealed that 48 % had throat pain, 24.6 % had halitosis, 13.5 % had vomiting and 11 % had dry mouth.

Hence the Hypothesis H_1: There is a significant difference between the pre test and post test level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai was accepted

The Third objective was associate level of dry mouth among nasogastric tube children with their selected socio demographic variables and clinical variables in pediatric ward at Government Rajaji Hospital , Madurai.

The level of dry mouth among nasogastric tube children with their selected socio demographic variables and clinical variables . Chi square analysis was done. There is significant association between the posttest dry mouth level and selected socio demographic variable occupation of mother($\chi 2$ -9.40). And there is no significant association between the posttest dry mouth level and selected socio demographic variable such as Children Age, Sex, Education of child, Educational status of mother, Educational status of Father, Area of residence and family income per month.

This study finding was consistent with the study finding of Yaoly, Chang C.K, Maa S.H., (2007) was conducted an experimental study to assess the effectiveness of purified water on dry mouth among mechanical ventilator children in Taiwan, 57 samples were included. The study revealed that cleansing the mouth with purified water is effective in reducing dry mouth p = 0.05 among ventilator children

These findings congruent with the study done by Soh K L, Soh K G, Japar S, (2011) was conducted a systematic literature review on oral hygiene practices for PICU children in mechanical ventilation. Articles published form 1985 to 2005 in English and indexed in CINAHL, MEDLINE, AND EMBASE were searched. The result concluded that despite the importance of providing oral hygiene to PICU patients receiving mechanical ventilation, high level evidence from rigorous

randomized controlled trials or high quality systematic review that could finger clinical practice is scarce

Hence the Hypothesis H_2: There is a significant association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai with their selected socio demographic variables and clinical variables was accepted.

Summary, Conclusion, Implications & Recommendations

CHAPTER-VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter presents the summary of the study and conclusion drawn, clarifies the limitation of the study, the implications and the recommendations, different areas like nursing practice, nursing education, nursing administration and nursing research deserve implication.

6.1 Summary of the study

Statement of the Problem

"A Study to evaluate the effectiveness of oral hygiene on dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai .

Objectives of The Study Were

1. To assess the level of dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital.
2. To evaluate the effectiveness of Oral Hygiene on Dry mouth among nasogastric tube children in Pediatric Ward at Government Rajaji Hospital.
3. There is a significant association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital , Madurai, with their selected socio demographic variables and clinical variables.

The Following Hypotheses Were Tested at 0.05 level

H_1: There is a significant difference between the pre test and post test level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai.

H_2**:** There is a significant association between the level of dry mouth among nasogastric tube children in pediatric ward at Government Rajaji Hospital, Madurai, with their selected socio demographic variables and clinical variables.

The Study assumptions were

- Nasogastric tube children may have dry mouth.

The study was conducted in Pediatric wards at Government Rajaji Hospital, Madurai. The conceptual framework adopted was Modified Orem's self care theory. Quantitative approach - Pre-experimental, one group pre test post test research design was adopted. The independent variable was oral hygiene and the dependent variable was dry mouth. Non probability consecutive sampling technique was adopted to select 40 samples by picking up the available samples who fulfill the inclusion criteria during the period of data collection. The accessible population for the study was 40, nasogastric tube children admitted in Pediatric wards at Government Rajaji Hospital, Madurai. Intervention carried out is oral hygiene.

The tool used in this study consists of two sections.

Section I

- Socio demographic variables
- Clinical Variables

Section II

- Modified Beck's oral assessment Scale

Content validity was obtained from five experts in the field of Medicine and Child Health nursing. Pilot study was conducted to find out the feasibility of the study and it did not show any major flaw in the design of the study. On the 1st day, After data collection with modified Beck oral assessment guide, the level of oral hygiene was assessed, followed by oral hygiene three times daily for 3 consecutive days. Post test was conducted on 4thday using the same Modified Beck oral assessment scale, as the same procedure was followed for all the 40 samples . Data was collected for six weeks from 19.03.17to 30.05.2017 and based on the objectives and hypothesis, data were analyzed using descriptive and inferential statistics.

6.2 Major findings of the study were

- ❖ Considering the age wise distribution of children where 20 (50%) of them were 3 -6 years of age, next 15 (37.5 %) were in 6 – 9 years of age and remaining 5 (12.5%) were in 9 – 12 years of age.
- ❖ Regarding sex wise distribution majority 24 (60%) were Male children, and remaining 16 (40 %) were Female children.
- ❖ Based on the education wise distribution of the children 10 (25 %) belong to no formal education, 17 (42.5 %) belong to Pre KG to 2 standard, 11 (27.5 %) belong to 3 to 5 standard , 4 (10 %) belong to 6 to 8 standard.
- ❖ Considering the education status of fathers ,10 (25 %) fathers belong to no formal education, 14 (35 %) fathers belong to Primary school education, 11 (27.5 %) fathers belong to High school education, 2 (5 %) were belongs to Higher secondary, 3 (7.5 %) fathers belong to Graduates / Professionals.

- On the basis of education status of mothers, 7 (17.5 %) mothers belong to no formal education, 16 (40 %) mothers belong to Primary school education, 10 (25 %) mothers belong to High school education, 6 (15 %) mothers belong to Higher secondary, 1 (2.5 %) mothers belong to Graduates / Professionals.
- Based on the occupation of fathers, 2 (5%) fathers belong to Govt. Employee, 6 (15%) fathers belong to Private employee, 11 (27.5 %) fathers belong to Business, 21 (52.5%) fathers belong to daily wages.
- Regarding on the occupation of Mothers, 24 (60 %) mothers belong to house wives, 2 (5%) mothers belong to Govt. Employee, 5 (12.5%) mothers belong to Private employee, 9 (22.5 %) belong to Business, 0 % belong to daily wages.
- With respect to area of residence 17 (42.5) were Rural, 11 (27.5 %) were suburban and 12 (30 %) were urban.
- With the view of family income per month, 3 (7.5%) families range below Rs 5000, 20 (50 %) families range between Rs 5001 – 10000,14 (35%) families range between Rs 10001 – 15000,3 (7.5 %) families range above Rs 15001.

Discussion of clinical variables

- According to the total number of teeth, 3 (7.5 %) have less than 20 teeth, 14 (35 %) have 20 teeth, and 23 (57.5 %) have more than 20 teeth.
- Based on type of breathing, 3 (7.5 %) of them were breathing Nose, 23 (57.5 %) of them were breathing Mouth and 14 (35 %) of them were breathing to Nose and Mouth.
- Discussing the intravenous fluid administration ¾th of samples 33 (82.5%) had intravenous fluid and 7 (17.5 %) had no intravenous fluid.

- ❖ According to the purpose of nasogastric tube , 23 (57.5 %) of them for feeding, 17 (42.5 %) of them for aspiration purpose.
- ❖ Regarding the duration of nasogastric tube placed, 22 (55 %) for 1 – 2 days, 17 (42.5 %) for 3 -4 days, 1 (2.5 %) for 5 -6 days and none (0%) for more than 7 day.

In Pre test 4 (10 %) had mild dry mouth, 33 (82.5 %) had moderate dry mouth, and 3 (7.5 %) had severe dry mouth. In Post test 28 (70 %) were Normal mouth, remaining 12 (30%) had mild dry mouth. Hence no one scored in Moderate dry mouth and severe dry mouth.

The level of dry mouth regarding pretest and posttest mean score is 14.675 and 6.6 respectively. Standard deviation score is 2.69 and 1.104 respectively. Mean difference between the pretest and posttest is 8.075. Paired 't' test value 23.98. is much higher than the table value at $P<0.001$ level of significance. So the researcher observed that there is a highly significant decreased level of dry mouth of nasogastric tube children in Pediatric ward at Government Rajaji Hospital, Madurai and also oral hygiene is very mush effective.

The level of dry mouth among nasogastric tube children with their selected socio demographic variables. Chi square analysis was done. There is significant association between the posttest dry mouth level and selected socio demographic variable occupation of mother($\chi 2=9.40$). And there is no significant association between the posttest dry mouth level and selected socio demographic variable such as Children Age, Sex, Education of child, Educational status of mother, Educational status of Father, occupation of father, occupation of mother, area of residence and family income per month.

6.3 Conclusion

The Statistical evidence proved that the oral hygiene was very effective in reducing the dry mouth among the nasogastric tube children admitted in Pediatric wards. Hence the researcher concluded that the Oral hygiene can be provided among nasogastric tube children for those who are unable to meet their oral care.

6.4 Implications of the study

The investigator had drawn several implications from this study for various areas such as nursing practice, nursing education, nursing administration and nursing research.

6.4.1 Implications for nursing practice

- Bed side nurses should take responsible for the oral assessment and enhancement of oral hygiene or the nasogastric tube children
- Mouth care incorporating fluoride paste can be followed as it is effective in improving oral hygiene among nasogastric tube children.
- Nasogastric tube children oral assessment should be considered as a part of the admission assessment.
- Foam swabs are ineffective in removing plague, whereas the use of an artery forceps and gauze can be recommended instead.

6.4.2 Implications for nursing education

- Educate that good oral hygiene is essential to reduce dry mouth and nosocomial infection in the nasogastric tube children
- Effective oral hygiene is important for the nasogastric tube children in Pediatric wards to maintain and reduce the level of dry mouth.
- The frequency of oral care is an area of controversy and may depend more on the children’s condition

6.4.3 Implications for nursing research

- This study can be a baseline for future studies to build upon and motivate
- A study can be done with large samples and also for long duration.
- A study can be done with other oral care solutions and effectiveness can be analyzed in the maintenance of oral hygiene.
- Research is also needed to determine the impact of oral health on patient's outcome.

6.4.4 Implications for nursing administration

- Administrator may pay special attention to student nurse to educate and evaluate their oral hygiene procedure in the nasogastric tube children.
- Administrator can encourage the nurses to assess the level of dry mouth of all the children and make it as one of the assessment procedure.
- Articles and materials needed for providing oral hygiene must be made available by the Administrative department.
- Nursing Administrator can formulate protocols to incorporate the oral hygiene.
- In service education programme can be conducted to disseminate the research findings for better practice.

6.5 Recommendations

- A similar study can be replicated with larger sample for better generalization
- A comparative study can be done between Fluoride paste and any other mouth care solutions to evaluate the best.
- A study can be conducted to assess the knowledge, attitude and practice of nursing staff regarding oral care.
- A similar study can be conducted in other population like critically ill Male and female Patient Critical care unit.

Bibliography

REFERENCES

Books

1. Basavanthappa B.T (2009). *Nursing Research* (1st Edition). New Delhi: Published by jaypee brothers medical publishers.
2. Basavanthappa B T.(2009). *Nursing Theories*. 2nd ed. NewDelhi. jaypee
3. Beharaman, Richerd K, Nelson (2009). *Text book of pediatrics*. 19th ed. Philadelphia: W B Saunders
4. Denise, F. Polit, & Cheryl Tetano Beck. (2004). *Nursing Research Principles and Methods.* (7thed.). Philadelphia: Lippincott.
5. Dorathy R Marlow. Barbara. A. Redding (1998). *Text Book of Pediatric Nursing* (6th Edition). Philadelphia: published by W.B.Saunders Company.
6. Dutta A K.(2007). *Advances in Pediatrics*. 6th ed. NewDelhi. Jaypee
7. Fawcett jacquiline. (1989). Analysis and evaluation of conceptual model of nursing .Philadelphia:F.A.Davis.
8. Geri lobiondo-wood., & Judith haber. (2006*). Nursing research*. (6thed.).st.louis: mosby publications.
9. Ghai, O.P. (2004). *Essential pediatrics*. (6Eds.). New Delhi: CBS publisher.
10. Glencoe.(1996).*Understanding Psychology*. (4 Eds.).California:MC.Grow Hill publishers.
11. Gupta. S. P (2002). *Statistical Methods*. New Delhi: Sultan Chand & Sons Publishers.
12. Hockenberry.wilson. winkelstienklive. (2006). *Wong's nursing care of infants and children.*(7Eds.). New Delhi:Elsevier publishers.
13. Julia. B George.(1996). *Nursing Theories*. 3rd ed. New Jersy: Prentice Hall company.

14. Julius Scott.(2011).*Scott's Pedia – Tricks*.3rd Edition, Hyderabad : Hitesh Kothari Paras medical Books pvt.Ltd.
15. Kothari C.R (2001).*Research Methodology: Methods and Techniques*(2 Eds).NewDelhi: Vishva Prakash Publishers
16. Lippincott Williams Wilkins. (2010). *Manual of Nursing Practice*. 9th edition.New Delhi: Wolters Kluwer (India) Pvt Ltd.
17. Mahajan. B. K. (1991). *Methods in Biostatistics*. New Delhi: Jaypee Brothers
18. Marlow Dorothy R, Barbara.(2009). *Text book of Pediatric Nursing.* 6th ed. Philadelphia: W B Saunders.
19. Marilyn J Hockenberry.(2009). *Essentials of Pediatric Nursing.* 8th ed. St. Louis. : Mosby Elsevier
20. Polit., Beck.,&Hungler, P. (2001). *Essentials of Nursing Research*.(4th ED.). Philadelphia: Lippincott Raven Publishers.
21. Panchalipal.(2016). *Test Book of Pediatric Nursing.* 1st edition.Putlibowli: Paras Medical Publisher.
22. Polit.,Hungler.(2009). *Nursing research Principles and Methods.* 8th ed. Philadelphia: J.P. Lippincott
23. Rose Marie Linda. (2008). *Foundations of Nursing Research*.(5th ED.). New Delhi: Pearson Prentice Hall.
24. Santhosh Kumar.A.(2016). *Hand book of Pediatric*.5th Edition.New Delhi: Rajencler kumar Arya.
25. Santhosh Kumar.A.(2014). *Pediatric Clinical Examination*.4th Edition. Hydrabed: Paras medical publisher.
26. Viswanathan .J. desai. (2006). *Achar's text book of paediatrics*. (3Eds).new Delhi :orient longman publications

Jounal References

1. American Academy of Pediatrics, Section of Pediatric Dentistry. 2003. *Oral health risk assessment timing and establishment of the dental home.* Pediatrics 3(5):11131116.
2. New a check PW, Hughes DC, Hung YY, Wong S, Stoddard JJ. 2000. *The unmet needs of America's children. Pediatrics* 105(4 Pt. 1):989-997.
3. Mouradian WE, Wehr E, Crall JJ. 2000. *Disparities in children's oral health and access to dental care.* JAMA 282(20):2625-2631.
4. Tang JM, Altman DS, Robertson DC, O'Sullivan DM, Douglass JM, Tinanoff N. 1997. *Dental caries prevalence and treatment levels in Arizona preschool children. P*ublic Health Reports 12(4):319-329.
5. Drury TF, Horowitz AM, Ismail AI, Maertens MP, Rozier RG, Selwitz RH. 1999. *Diagnosing and Reporting Early Childhood Caries for Research Purposes. J*ournal of Public Health Dentistry 59(3):1992-1997.
6. U.S. Department of Health and Human Services. 2000. Healthy People 2010: Volume II (2nd ed.). Washington, DC: U.S. *Department of Health and Human Services*. /Document/HTML/Volume2/21Oral.htm.
7. Vargas CM, Crall JJ, Schneider DA. 1998. *Sociodemographic distribution of pediatric dental caries*: NHANES III, 1988-1994. Journal of the American Dental Association 129(9):1229-1238.
8. Centers for Disease Control and Prevention. 2000. Achievements in public health, 1900-1999: *Fluoridation of drinking water to prevent dental caries.* Morbidity and Mortality Weekly Report 48(41):933-940.

9. Barsley R, Sutherland J, McFarland L. 1999. *Water fluoridation and costs of Medicaid treatment for dental decay* — Louisiana, 1995-1996. Morbidity and Mortality Weekly Report 48(34):753-757.
10. Newacheck PW, McManus M, Fox HB, Hung YY, Halfon N. 2000. *Access to health care for children with special health care needs. Pediatrics* 105(4 Pt. 1):760-766.
11. Schechter N. 2000. *The impact of acute and chronic dental pain on child development.* Journal of the Southeastern Society of Pediatric Dentistry 6(2):16-17.
12. Miranda-Rius J, Brunet-Llobet L, Lahor-Soler E, Farré M. *Salivary Secretory Disorders, Inducing Drugs, and Clinical Management.* Int J Med Sci 2015; 12(10):811-824. doi:10.7150/ijms.12912
13. Denton, E. (1999). Palliative care: Mouth care an indicator of the level of nursing care a patient receives? *Journal of Community Nursing*, 13(11), 8-11.
14. Gillam, J. L. & Gillam, D. G. (2006). The assessment and implementation of mouth care in palliative care: a review. *The Journal of the Royal Society for the Promotion of Health*, 126(1), 33-37
15. Huskinson, W. & Lloyd, H. (2009). *Oral Health in hospitalized patients: assessment and hygiene*. *Nursing Standard*, 23(36), 43-47.
16. Evans G (2001) A rationale for oral care. *Nursing Standard.* 15, 43, 33-36.Date of acceptance: March 28 2001.
17. Abdul-Aziz M. *effect of educational program on nurses, knowledge and skills about oral care for traumatized patients*, AAMJ, 2014;12 (1): 25-47.

18. Labeau S, Van de Vyver K, Brusselaers N, Vogelaers D, Blot SI. *Prevention of ventilatorassociated pneumonia with oral antiseptics: a systematic review and meta-analysis.* The Lancet Infectious Diseases J 2011;11(11):845–54.
19. Chastre J and Fagon J. *Ventilator-associated Pneumonia",* American Journal of Respiratory and Critical Care Medicine, 2002; 165(7): 867-903.
20. Wårdh I , Hallberg L, Berggren U, Andersson L and Sörensen S. *Oral health care- a low priority in nursing. In depth interviews with nursing staff.*" Scand J Caring Sci 2000; 14(2): 137-42.
21. Prendergast,V., Hallberg,I., Jahnke, H., Kleiman, C., Hagell, *P. Oral health, ventilatoracquired pneumonia, and intracranial pressure in intubated patients in a neuroscience intensive care unit.* American Journal of Critical Care, 2009; 18(4):368-76.
22. Berry A, Davidson P, Masters J and Rolls K. *Systematic literature review of oral hygiene practices for intensive care patients receiving mechanical ventilation* Am J Crit Care. 2007;16(6):552-62 .
23. Haffajee A, Thompson M, Torresyap G, Guerrero D, Socransky S. *Efficacy of manual and powered toothbrushes (I). Effect on clinical parameters.* J Clin Periodontol (2001); 28(1):937-46.
24. Heanue M, Deacon S, Deery C, Robinson P, Walmsley A and Worthington H. *Manual versus powered toothbrushing for oral health,Cochrane Database* Syst Rev 2003; (1).
25. Lazarescu, D., Boccaneala, S., Illiescu, A., & De Boever, J. *Efficacy of plaque removal and learning effect of a powered and a manual toothbrush*. Journal of Clinical Periodontology, 2003; 30(8):726-31.

26. .Robinson, P. Deacon, S., Deery, C., Heanue, M.,Walmsley, A., Worthington, H., I Shaw, W. *Manual versus powered tooth brushing for oral health. Cochrane Database of Systematic* Reviews,2005;18 (20): 1-5.
27. Williams, K., Ferrante, A., Dockter, K., Haun, J., Biesbrock, A, & Bartizek, R.. *One- and 3- minute plaque removal by a battery-powered versus a manual toothbrush.* Journal of Periodontology, 2004; 75(8):1107-13.
28. Terezakis E, Needleman I, Kumar N, Moles D, Agudo E. *The impact of hospitalization on oral health's systematic review*. J Clin Periodontol , 2011; 38(7): 628-36.

Net References

1. http://www.ccn.aacnourals.org
2. http://www.clincaltrials.gov
3. http://www.currentnursing.com
4. http://health.allrefer.com/health/nursing assessment-info.html
5. http://www.medscape.com
6. http://www.ncbi.nlm.nih.gov
7. http://www.nursingtimes.net.com
8. http://www.pubmed.com
9. http://www.sciencedirect.com
10. http://www.thecochranelibrary.com
11. http://www.tnhealth.org
12. http://www.wikipedia.com
13. http://www.ncbi.nlm.nih.gov/pubmed
14. www.clinicalestablishments.nic.in
15. http://ajcc.aacnjournals.org

Appendices

APPENDIX – I

Letter seeking and granting permission to conduct the study in Pediatrics Ward at Madurai Rajaji Hospital, Madurai

From,

O.Selvarajan.

M.Sc[N] –I I year [Br-II. Child Health Nursing]..

College of Nursing,

Madurai Medical College, Madurai – 20.

To,

The Director,

Institute of Child Health and Research Centre.

Govt. Rajaji Hospital ,

Madurai – 625 020

Respected Sir,

Sub : CON,MMC,Madurai-20- M.Sc(N) II year child Health Nursing Student- Permission for conduct dissertation study – Paediatric ward in GRH, Madurai request – regarding.

As per the Indian Nursing Council and The Tamil Nadu Dr. M.G.R. Medical University curriculum requirement all branches of M.Sc Nursing candidates are required to conduct a dissertation study for the partial fulfilment of the P.G. Degree course in their respective departments.

I have selected a study topic **"A Study to evaluate the effectiveness of Oral Hygiene in Dry mouth among nasogastric tube children in Pediatric ward at Government Rajaji Hospital ,Madurai.** So, kindly request you to consider, allow me conduct the study in paediatric Wards in GRH at Madurai -20. I assure that I will not disturb their routine activities.

Thanking you,

Place : Madurai

Date : 07.02.17

Yours obediently,

O.

[O.SELVARAJAN]

Permitted

07/02/2017

DIRECTOR
INSTITUTE OF CHILD HEALTH &
RESEARCH CENTRE
GOVT. RAJAJI HOSPITAL
MADURAI-625020

APPENDIX – II

Ethical committee approval to conduct a study

MADURAI MEDICAL COLLEGE
MADURAI, TAMILNADU, INDIA -625 020
(Affiliated to The Tamilnadu Dr.MGR Medical University, Chennai, Tamil Nadu)

Prof Dr V Nagaraajan MD MNAMS DM (Neuro) DSc.,(Neurosciences) DSc (Hons)
Professor Emeritus in Neurosciences, Tamil Nadu Govt Dr MGR Medical University
Chairman, IEC

Dr.M.Shanthi, MD.,
Member Secretary,
Professor of Pharmacology,
Madurai Medical College, Madurai.

Members

1. Dr.K.Meenakshisundaram, MD (Physiology)Vice Principal, Madurai Medical College

2. Dr.Sheela Mallika rani, M.D., Anaesthesia , Medical Superintendent Govt. Rajaji Hosptial, Maudrai

3.Dr.V.T.Premkumar,MD(General Medicine) Professor & HOD of Medicine, Madurai Medical & Govt. Rajaji Hospital, College, Madurai.

4.Dr.D.Maruthupandian, MS., Professor & H.O.D. Surgery, Madurai Medical College & Govt. Rajaji Hosptial, Madurai.

5.Dr.G.Meenakumari, MD., Professor of Pathology, Madurai Medical College, Madurai

6.Mrs.Mercy Immaculate Rubalatha, M.A., B.Ed., Social worker, Gandhi Nagar, Madurai

7.Thiru.Pala.Ramasamy, B.A.,B.L., Advocate, Palam Station Road, Sellur.

8.Thiru.P.K.M.Chelliah, B.A., Businessman,21, Jawahar Street, Gandhi Nagar, Madurai.

ETHICS COMMITTEE CERTIFICATE

Name of the Candidate	:	O.Selvarajan
Course	:	M.Sc., Nursing (Child Health Nursing)
Period of Study	:	2015 - 2017
College	:	MADURAI MEDICAL COLLEGE
Research Topic	:	A study to evaluate the effectiveness of oral hygiene on dry mouth among Nasogastric tube children in Paediatrics ward at Govt. Rajaji Hospital, Madurai
Ethical Committee as on	:	08.02.2017

The Ethics Committee, Madurai Medical College has decided to inform that your Research proposal is accepted.

Member Secretary Chairman Dean / Convenor

Prof Dr V Nagaraajan
M.D., MNAMS, D.M., Dsc.,(Neuro), Dsc (Hon)
CHAIRMAN
IEC - Madurai Medical College
Madurai

Madurai Medical College
Madurai-20

APPENDIX – III

Letter seeking expert suggestion and tool validation

From,

O.Selvarajan.
M.Sc[N] –I I year [Br-II. Child Health Nursing]..
College of Nursing,
Madurai Medical College, Madurai – 20.

To,

Respected Madam / Sir,

Sub: requesting opinion and suggestion of experts for content validity of tool for **"A Study to evaluate the effectiveness of oral hygiene in dry mouth among nasogastric tube children in Pediatric ward at Government Rajaji Hospital,Madurai**

- - - - - - - -

I am O.Selvarajan. II year M.Sc [Nursing] student in College of nursing, Madurai Medical College, Maduai. In partial fulfilment of Master Degree in Nursing, I Have Selected the topic for the dissertation to submit to the Dr. M.G.R. Medical University, Chennai. I request you to kindly validate ther tool and give your expert opinion for necessary modification and I would be very grateful if you could refine the problem statement and the objectives.

Thanking you.

Place : Madurai Yours sincerely,

Date :

Enclosure: [O.SELVARAJAN]

Statement of the Problem

Objectives

Research tool : 1. Sociodemographic profile

2. Beck Oral Assessment Scale

APPENDIX – IV

Content validity certificate

This is to certify that the tool

SECTION A - Sociodemographic data

SECTION B - Beck Oral Assessment Scale

Prepared for data collection by Mr.O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20,who has undertaken the study field on thesis entitled **"A Study to evaluate the effectiveness of Oral Hygiene on Dry mouth among Nasogastric Tube Children in Pediatric ward at Government Rajaji Hospital , Madurai ."** has been validated by me.

03/03/2017

Signature of the Expert

Name : Dr. K. MATHIARASAN MD DCH.

Designation :

DIRECTOR
INSTITUTE OF CHILD HEALTH &
RESEARCH CENTRE
GOVT. RAJAJI HOSPITAL
MADURAI-625020

Date :

CERTIFICATE OF VALIDATION

This is to certify that the tool

SECTION A - Sociodemographic data

SECTION B - Beck Oral Assessment Scale

Prepared for data collection by O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20,who has undertaken the study field on thesis entitled **"A Study to evaluate the effectiveness of Oral Hygiene on Dry mouth among Nasogastric Tube Children in Pediatric ward at Government Rajaji Hospital , Madurai ."** has been validated by me.

Signature of the Expert

Dr. B. HEMANTHKUMAR, M.S.,M.Ch.,
Professor & HOD
Dept. of Paediatric Surgery
Govt. Rajaji Hospital &
Madurai Medical College, Madurai-20

Name :

Designation :

Date : 03/3/2017

CERTIFICATE OF VALIDATION

This is to certify that the tool

SECTION A - Sociodemographic data

SECTION B - Beck Oral Assessment Scale

Prepared for data collection by O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20,who has undertaken the study field on thesis entitled **"A Study to evaluate the effectiveness of Oral Hygiene on Dry mouth among Nasogastric Tube ~~Children~~ in Pediatric ward at Government Rajaji Hospital , Madurai ."** has been validated by me.

Signature of the Expert

Mrs. P. MALLIKA, M.S.(N).,
PRINCIPAL,
J. K. COLLEGE OF NURSING,
SF No: 90, KAMARAJ ROAD,
UPPILIPALAYAM,
COIMBATORE- 641 015.

Name : P. MALLIKA

Designation : Principal

Date : 15.3.2017

CERTIFICATE OF VALIDATION

This is to certify that the tool

SECTION A - Sociodemographic data

SECTION B - Beck Oral Assessment Scale

Prepared for data collection by O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20,who has undertaken the study field on thesis entitled **"A Study to evaluate the effectiveness of oral hygiene on dry mouth among nasogastric tube children in Pediatric ward at Government Rajaji Hospital , Madurai ."** has been validated by me.

Signature of the Expert

PRINCIPAL
SRR: BHARANI COLLEGE OF NURSING
Opp: ESI Hospital Quarters,
Main Road M. Kallappatty, SALEM-38

Name : MRS. K. AMUDHA.

Designation : PRINCIPAL

Date : 21.03.2017.

CERTIFICATE OF VALIDATION

This is to certify that the tool

SECTION A - Sociodemographic data

SECTION B - Beck Oral Assessment Scale

Prepared for data collection by Mr.O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20,who has undertaken the study field on thesis entitled **"A Study to evaluate the effectiveness of Oral Hygiene on Dry mouth among Nasogastric Tube Children in Pediatric ward at Government Rajaji Hospital , Madurai ."** has been validated by me.

R. Jothi

Signature of the Expert

R. JOTHI LAKSHMI, M.Sc.,(N)Ph.D.
Associate Professor
Sacred Heart Nursing College
MADURAI - 20

Name : R. Jothi lakshmi

Designation : Reader.

Date : 27.03.17

APPENDIX – V

Informed consent form

ஒப்புதல் அறிக்கை

பெயர்: தேதி:

எனக்கு இந்த ஆய்வைப் பற்றிய முழு விவரம் விளக்கமாக எடுத்துரைக்கப்பட்டது. இந்த ஆய்வில் பங்கு பெறுவதில் உள்ள நன்மைகள் மற்றும் தீமைகள் பற்றிநான் புரிந்து கொண்டேன். நான் இந்தஆய்வில் தானாகவே முன்வந்து என ---------- பங்குபெற சமமதிக்கிறேன். மேலும் இந்த ஆய்வில் இருந்து எந்தநேரமும் விலகிக் கொள்ள முழு அனுமதி வழங்கப்பட்டுள்ளது. என் ---------- னுடைய சிகிச்சை ஆவணங்களைப் பார்வையிட்டு அதில் உள்ள விவரங்களை ஆய்வில் பயன்படுத்திக் கொள்ள அனுமதி அளிக்கின்றேன். என் ---------- னுடைய பெயர் மற்றும் அடையாளங்கள் ரகசியமாக வைத்துக் கொள்ளப்படும் என்றும் எனக்கு உறுதியளிக்கப்பட்டுள்ளது.

கையொப்பம்

APPENDIX – VI

Research Tool – English

SOCIODEMOGRAPHIC VARIABLES

1.Age in years

a). 3 - 6 years

b) 6 – 9 years

c) 9 - 12 years

2. Sex

a) Male

b) Female

3. Education of child

a) No formal education

b) Pre KG to 2 standard

c) 3 to 5 th standard

d) 6 to 8 th standard

4. Educational status of father

a) No formal education

b) Primary school level

c) High school level

d) Higher secondary school

e) Graduate / Professionals

5. Educational status of Mother

a) No formal education

b) Primary school level

c) High school level

d) Higher secondary school

e) Graduate / Professionals

6. Occupation of Father

a) Govt. employee

b) Private employee

c) Business

d) Daily wages

e) Un employee

7. Occupation of Mother

a) House wife

b) Govt. employee

c) Private employee

d) Business

e) Daily wages

8. Area of Residence

a) Rural

b) Suburban

c) Urban

9. Family income per month

a) Below Rs 5000

b) Rs 5001- 10,000

c) Rs 10,001 – 15,000

d) Above Rs 15,001

CLINICAL VARIABLES

10.Total number of teeth

a) Less than 20

b) 20

c) More than 20

11.Type of breathing

a) Nose

b) Mouth

c) Nose & Mouth

12. Intravenous fluid administration

a) Yes

b) No

13. Purpose of nasogastric tube

a) Feeding

b) Aspiration

c) Both

d) Others

14. How long is the nasogastric tube placed

a) 1 – 2 day

b) 3 – 4 days

c) 5 – 6 days

d) more than 7 days

Name of The Child : **Age /Sex :** **Ward / Unit :**

IP No : **Date :**

Modified Beck oral assessment scale (BOAS)

Area	Score				Total Score
	1	2	3	4	
Lips	Smooth, pink, moist and intact	Slightly dry, red	Dry, swollen isolated blisters	Edematous , inflamed blisters	
Gingival and oral mucosa	Smooth, pink, moist and intact	intact Pale, dry, isolated lesions	Swollen red	Very dry and edematous	
Tongue	Smooth, pink, moist and intact	Dry, prominent papillae	Dry, swollen, tip and papillae are red with lesions	Very dry, edematous, engorged coating	
Teeth	Clean, , no debris	Minimal debris	Moderate debris	Covered with debris	
Saliva	Thin, watery plentiful	Increase in amount	Scanty and somewhat thicker	Thick and ropy, viscid or mucid	
Halitosis	No halitosis	Mild halitosis	Moderate halitosis	Severe halitosis	
Total Score Note	0 -6 : Normal	7-12 Mild Dry mouth	13-18 Moderate Dry mouth	19-24 Severe Dry mouth	

APPENDIX – VII

Research Tool – Tamil

தன்நிலைவிளக்க குறியேடு

பகுதி– அ

கீழ்க்கண்டவற்றுள் சரியானததேர்வுசெய்க.

1. **குழந்தைகளின் வயதுவருடங்களில்**
   a) 3-6 வயது
   b) 6-9 வயது
   c) 9-12 வயது

2. **பாலினம்**
   a) ஆண்
   b) பெண்

3. **குழந்தையின் கல்விதகுதி**
   a) பள்ளிக்குச் செல்லவில்லை
   b) தொடக்கப்பள்ளி– 2 வகுப்பு
   c) 3வகுப்பு - 5 வகுப்பு
   d) 6 வகுப்பு - 8 வகுப்பு

4. **குழந்தையுடையதந்தையின் கல்வித்தகுதி**
   a) பள்ளிக்குச் செல்லவில்லை
   b) தொடக்கக்கல்வி
   c) உயர்நிலைக்கல்வி
   d) மேல்நிலைக்கல்வி
   e) பட்டபடிப்பு/தொழில் சம்பந்தபடிப்பு

5. **குழந்தையின் அம்மாவுடையகல்வித்தகுதி**

a) பள்ளிக்குச் செல்லவில்லை

b) தொடக்கக்கல்வி

c) உயர்நிலைக்கல்வி

d) மேல்நிலைக்கல்வி

e) பட்டபடிப்பு/தொழில் சம்பந்தபடிப்பு

6. **தந்தையின் தொழில்**

a) அரசாங்கபணி

b) தனியார் பணி

c) சொந்ததொழில்

d) தினக்கூலி

e) வேலைக்குச் செல்லவில்லை

7. **தாயின் தொழில்**

a. இல்லத்தரசி

b. அரசாங்கபணி

c. தனியார் பணி

d. சொந்ததொழில்

e. தினக்கூலி

8. **குழந்தையின் வசிப்பிடம்**

a) கிராமம்

b) சிறுநகரம்

c) நகரம்

9.குடும்ப உறுப்பினரின் மாதவருமானம்

a) ரூ.5000க்கும் கீழ்

b) ரூ.50001 முதல் 10000 வரை

c) 10001 முதல் 15000 வரை

d) ரூ.15000க்கும் மேல்

பகுதி- ஆ

நோய் பற்றிய விளக்கக் குறிப்பீடு

1. **குழந்தையின் தற்பொழுதுஉள்ளபற்களின் எண்ணிக்கை**

   a) 20க்கும் குறைவாக

   b) 20

   c) 20க்கும் மேலாக

2 **குழந்தையின் தற்பொழுதையசுவாசத்தன்மை**

   a) மூக்கின்மூலம் சுவாசித்தல்

   b) வாய் மூலம் சுவாசித்தல்

   c) மூக்குமற்றும் வாய்மூலம் சுவாசித்தல்

3 **குருதிநாளம் மூலம் திரவம் எதுவும் செலுத்தப்படுகிறதா**

   a) ஆம்

   b) இல்லை

4 **எதற்காகநாசியில் குழாய் பொருத்தப்பட்டுள்ளது.**

   a) உணவுக்காக

   b) கழிவுகளைநீக்க

   c) இரண்டும்

   d) மற்றவை

5 **நாசியில் குழாய் செலுத்திஎத்தனைநாள்கள் ஆகின்றன.**

   a) 1 – 2 நாள்கள்

   b) 3 – 4 நாள்கள்

   c) 5 – 6 நாள்கள்

   d) 7 நாட்களுக்கும் மேல்

பெக் வாய்வழிமதிப்பீடு ஸ்கோர் (BOAS)

பகுதிகள்	மதிப்பீடு				மொத்த மதிப்பீடு
	1	2	3	4	
உதடுகள்	மென்மையான இளஞ்சிவப்பு நிறத்துடன் ஈரமாக காணப்படுகிறது	சற்று உலர்ந்த நிலையில் சிவப்புநிறத்துடன் காணப்படுகிறது	உலர்ந்த நிலையில் வீக்கம் மற்றும் கொப்புளங்கள் காணப்படுகிறது	வீக்கங்கள்மற்றும் அழற்சி கொப்புளங்கள் காணப்படுகிறது	
ஈறு	மென்மையான இளஞ்சிவப்பு நிறத்துடன் ஈரமாககாணப்படுகிறது	வெளிறிய உலர் தனிமைப் படுத்தப்பட்ட புண்கள்	சிவப்புநிறத்துடன் வீக்கமும் காணப்படுகிறது	மிகவும் வறண்ட வீக்கத்துடன் கூடிய மாற்றம் உள்ளது	
நாக்கு	மென்மையான இளஞ்சிவப்பு நிறத்துடன் ஈரமாககாணப்படுகிறது	உலர் தன்மையுடன் நுனிநாக்கு காணப்படுகிறது	உலர் தன்மைவிக்கம், மற்றும் நாக்கின்முனைகளில் புண்கள் காணப்படுகின்றன.	மிகவறட்சியடைந்த வீக்கம் உள்ள நாக்கு வெண்நிறமாக காணப்படுகிறது	
பற்கள்	சுத்தமாக எவ்விதஅழுக்கும் இல்லாமல் இருக்கிறது	குறைந்தபட்ச அழுக்குகள்உள்ளன	மிதமான அழுக்குகள் காணப்படுகின்றது	அழுக்குகள் நிறைந்து காணப்படுகிறது	
உமிழ் நீர்	மெல்லிய தண்ணீரால் நிறைந்துள்ளது	உமிழ் நீர்அதிகளவில் காணப்படுகிறது.	உமிழ் நீர் குறைவாகவும் மற்றும் ஓரளவு அடர்த்தி மிகுதியாகவும் உள்ளது	அடர்த்தி அதிகமாகவும் கயிறு போன்ற பாகு அல்லது பூஞ்சைக் காளான் பிடித்தாகஉள்ளது	
வாய்நாற்றம்	வாய்நாற்றம்இல்லை	லேசானநாற்றம்	மிதமானநாற்றம்	அதிகமானநாற்றம்	
மொத்தமதிப்பெண்	0–6 நன்று	7–12 லேசான உலர்தன்மை	13–18 மிதமான உலர்தன்மை	18–24 அதிகமான உலர்தன்மை	

APPENDIX –VIII

English Editing Certificate

TO WHOM SOVER IT MAY CONCERN

This is to certify that the dissertation **"A Study to evaluate the effectiveness of Oral Hygiene on Dry mouth among Nasogastric Tube Children in Pediatric ward at Government Rajaji Hospital , Madurai ."** done by Mr. O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20. Has been edited for English language appropriateness.

Signature

S.KARTHICK.M.A.,B.Ed.,
B.T.ASST.ENGLISH
GOVT HIGH SCHOOL
CHELLAYEEPURAM-625 535
MADURAI [Dt]

Name : S. KARTHICK

Designation : B.T-ASST. ENGLISH

Date : 11.03.2017

APPENDIX – IX

Tamil Editing Certificate

TO WHOM SOVER IT MAY CONCERN

This is to certify that the dissertation **"A Study to evaluate the effectiveness of Oral Hygiene on Dry mouth among Nasogastric Tube Children in Pediatric ward at Government Rajaji Hospital , Madurai ."** done by Mr. O.SELVARAJAN, II year M.Sc (N) Student, College of Nursing, Madurai Medical College, Madurai -20. Has been edited for Tamil language appropriateness.

Signature 12/3/17.

R.KANAGAVALLI M.A.M.Phil M.Ed (தமிழ்)
P.G. ASST.
GOVT HR.SEC.SCHOOL
AUNDIPATTI.

Name திரு. கனகவல்லி.

Designation : P. G. Asst.
AUNDIPATTI.

Date : 12/3/17.

THENI (Dt).

APPENDIX – X

Intervention

Oral Hygiene Procedure

Oral hygiene is a nursing intervention given for around 5-10 minutes withuse of tooth brushing with fluoride paste circular movements side to side strokes and straight strokes, rinse with normal saline and application of oral glycerine in lips it reduce the dry mouth of the nasogastric tube children (3 -12 years)

Objectives of Oral Hygiene

- To keep mouth and teeth clean and in good condition
- To maintain the integrity of the lips tongue and mucous membrane of the mouth.
- To prevent the mucous membrane from becoming dry and cracked.
- To stimulate salivation
- To prevent sores which results in ulceration.
- To promote the comfort of the patients.
- To prevent coating of the tongue.
- To avoid plague formation.
- To prevent dental carries and tooth decay.
- To prevent complication arises due to neglected mouth.
- To prevent infection /stomatitis which results in local and general infections.

ARTICLES NEEDED FOR ORAL ASSESSMENT

S.No	ARTICLES	RATIONALE
1.	Mouth mirror	To visualize the buccal mocosa and tongue
2.	William's probe	To measure the debris
3.	Tongue blade	To visualize the the oral cavity
4.	Pen torch	To provide light source for better visualization

ARTICLES NEEDED FOR ORAL HYGIENE

S.No	ARTICLES	RATIONALE
1.	Small mackintosh and face towel	To prevent patient's clothing and bed linen from soiling
2.	Tooth brush with paste	To clean the teeth
3.	Dissecting/thumbforceps	To remove the used gauze piece from the Artery forceps To squeeze the excess normal saline
4.	Small bowel-2	To keep the gauze pieces
5.	Normal saline (0.9 %)	To provide the mouth rinse
6.	Kidney tray	To receive the waste
7.	Tongue depressor	To test the presence of gag reflex by placing tongue blade on back half of tongue. To separate the upper and lower teeth .
8.	Clean gloves	To protect self from infection. To prevent cross infection
9.	Small jug with plainwater.	To clean the face after mouth care
10.	Square gauze pieces	To clean the mouth
11.	oral glycerin	To apply in lips , to present dryness
12.	Towel to wipe afterprocedure	To refresh the patient after the procedure
13.	Mouth gag	To keep the mouth open
14.	Handy pen light	For better visualization of the oral cavity

PROCEDURE OF ORAL HYGEINE

S.No	NURSING ACTION	RATIONALE
1	Assess patients dry mouth	To know the status of themouth
2	Test for presence of gag reflex by placing tongue blade on back half of tongue	Reveals whether the patientis at risk of aspiration
3	Check the doctor's order for precautions regarding the movement and positioningof children.	Prevent injury to the patient.
4	Explain the procedure to the patient and/or to the relatives	Reduce the anxiety of children and care giver.
5.	Screen the patient	Provides privacy
6.	Raise bed to comfortable working level.Arrange articles by bed side	Use of good body mechanics prevents fatigue
7.	Position the children on side ,head turnedtowards researcher	Allows secretions to drainfrom mouth instead of collecting in the back ofpharynx and thus preventsthe aspiration
8	Place towel and mackintosh under the patients head and spread one towel overchest and kidney tray under the chin	To protect thepatients dress and bed linen from soiling To collect saliva thatmay drool from themouth.
9	Raise side rails of bed on both sides	Prevents the patient fromfalling.
10	Wash hands and don gloves	Reduce transfer of microorganism.
11	Lower the side rails of bed on the working side	To work comfortably
12	Separate upper and lower teeth with padded tongue depressor by inserting itquickly and gently if required	Provide access to oral cavity.
13	Take brush with pea size of fluoride paste less than 1000ppm . Starting at	To brush with Bass technique (an angle of 45^{0} between the brush and teeth)

	the left upper (LU) gingival surface of the teeth, then move to right upper (RU), then to right lower (RL), then to left lower (LL) gingival area in circular movements. swab each tooth gently and firmly Move along the same path on the inner surface of the teeth. Clean the Roof of the mouth.(side to side stroke) Clean the floor of the mouth. (side to side stroke) Clean the tongue including dorsum (back of the tongue)	
14.	Assist the children to rinse with normal saline	It is natural disinfectant but it also removes any swelling from the tissue.
16	Apply the oral glycerine in lips	It prevent the dryness of lips
17	Position the patient in comfortable position. Raise side rails, lower bed	To make the patient comfort
18	Replace all the articles after discardingthe waste, remove gloves, discard it andwash hands	Prevents transfer ofmicroorganisms
19	Record date, time, solution used,condition of mouth and any abnormalities, like bleeding/ inflammation	To have properdocument

APPENDIX – XI

Photographs